

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 3.

WASHINGTON, D. C., JANUARY 17, 1922.

MAY 23 1922

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., JANUARY 16, 1922.

At the beginning of the week a low pressure area over the Southwest attended by general rains gave indications of rapidly increasing proportions, and by Wednesday morning had fulfilled expectations and was central as a storm of great severity near the Virginia coast. Heavy rains over the eastern and southern areas of the storm's advance and snows over the western and northern areas with high winds attended its eastward movement. During the following 24 hours it moved rapidly northeastward along the Atlantic coast and snow, heavy in some localities, continued from the Middle Atlantic States and upper Ohio Valley northeastward to New England, the high winds drifting it badly in some sections.

During this period clear weather and generally low temperatures prevailed in the far West, and over the northern and central portions of the country from the Rocky Mountains to the Great Lakes.

The latter half of the week continued cold and clear in the Rocky Mountain and Plateau districts and generally fair weather with moderate midwinter temperatures prevailed in other districts, save for light snows in the Great Lakes region, Ohio Valley, and some adjacent districts, and light rains in portions of the Gulf States and southern Appalachian Mountain regions.

DEPTH OF SNOW.

The severe storm over the Atlantic Coast States brought a heavy covering of snow over the interior districts from Maryland and West Virginia northeast to central New England, the depth at points in central Pennsylvania and New York ranging from 10 inches to 2 feet. There were moderate increases during the week in most of the Great Lakes region, and some increases thence westward to the Rocky Mountains. Elsewhere there was little addition to the snow cover reported a week ago, and in many western mountain sections there were slight decreases, probably due to settling rather than melting.

ICE IN RIVERS AND HARBORS.

Due to moderately cold weather the amount of ice on the rivers and lakes of the Northern States increased slightly, except in a few cases where there were actual decreases, despite the favorable conditions for ice formation.

In the Missouri and its upper tributaries the increases during the week were mostly slight, but the river remains heavily covered from Omaha northward. The upper Mississippi and its tributaries had general increases and they, too, continue heavily covered from Keokuk northward. There were some decreases in the amounts of ice in the harbors of Lake Superior, but elsewhere in both the upper and lower Lakes there were moderate increases during the week. In New England there were no marked changes over the conditions reported a week ago, and the same may be said of the main streams of the Atlantic coast south of the Hudson, which still continue without a material cover, at least in their lower courses.

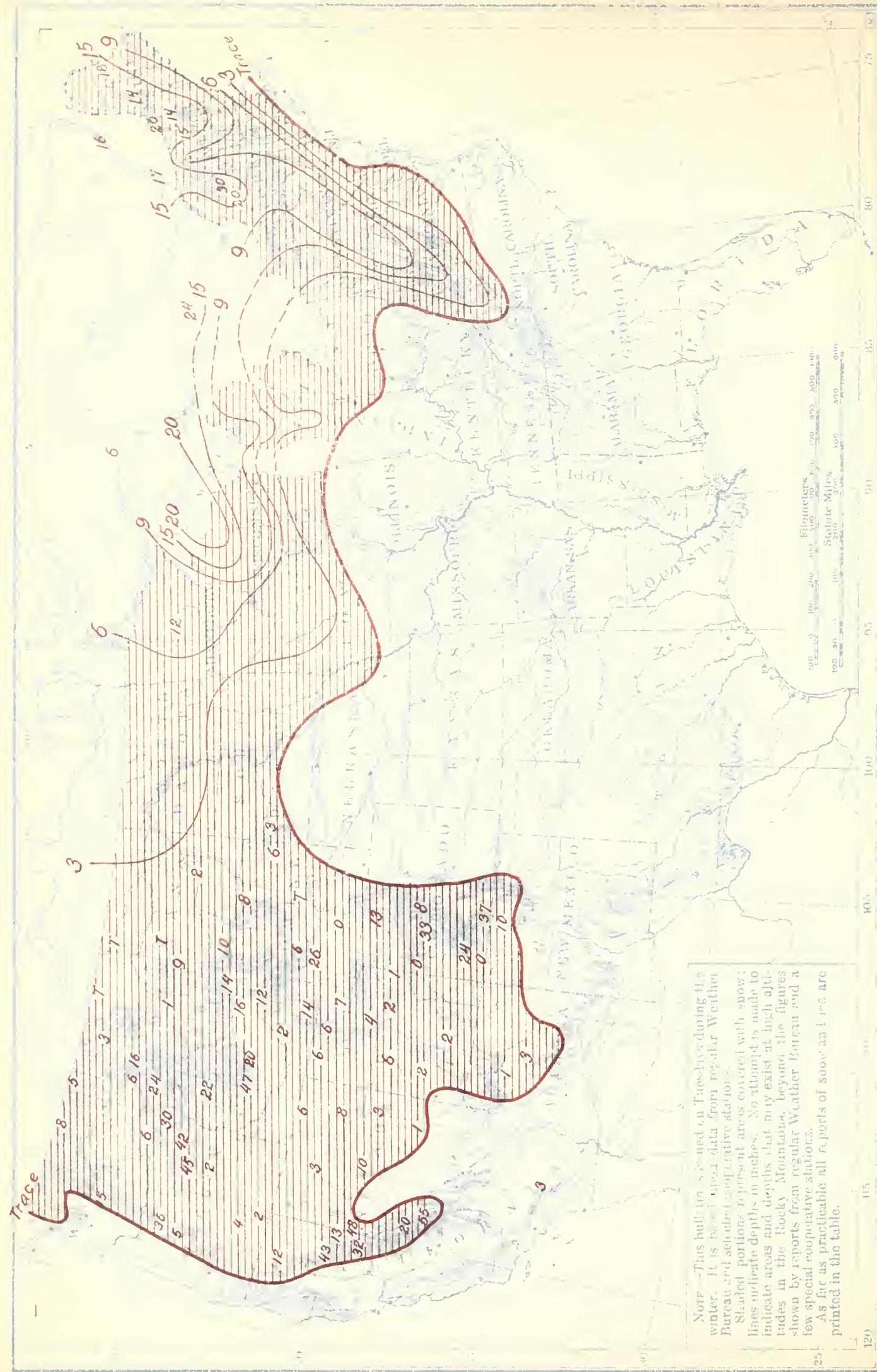
Except for stormy conditions over the Northeastern States for a day or so during the early part of the week, the weather was fine for harvesting the ice crop and this work is now going forward in all districts where ice is usually gathered, and where a sufficient thickness has been attained.

P. O. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 16, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	Montana.	Inches	Inches
Flagstaff	3.0	.....	Findon	9.0	.....
California.	.....	.....	Haugan	16.0	.....
Emigrant Gap	32.0	.....	Red Lodge	10.0	.....
Huntington Lake	55.0	.....	Nebraska.	.....	.....
McCloud	12.0	.....	Omaha	T.	5.5
Portola	13.0	.....	Nevada.	.....	.....
Squirrel Inn	3.0	.....	Arthur	8.0	.....
Summit	48.0	.....	Austin	10.0	.....
Colorado.	.....	.....	North Fork	8.0	.....
Cumbres	37.0	.....	New Hampshire.	.....	.....
Leadville	8.0	.....	Concord	10.0	14.0
Rico	24.0	.....	Keene	11.0	.....
Steamboat Springs	13.0	.....	Pittsburg	26.0	.....
Connecticut.	.....	.....	New York.	.....	.....
Hartford	4.0	12.0	Albany	6.0	8.0
West Cornwall	8.0	.....	Buffalo	4.0	*
Dist. of Columbia.	.....	.....	Canton	7.0	.....
Washington	0.0	1.0	Herkimer	12.0	.....
Idaho.	.....	.....	Ithaca	7.0	.....
Hailey	20.0	.....	Lowville	20.0	.....
Ketchum	20.0	.....	Oswego	9.0	†
McCall	22.0	.....	Rochester	8.0	7.0
Mackay	6.0	.....	Syracuse	8.0	.....
North Star Mine	19.0	.....	North Dakota.	.....	.....
Pocatello	2.0	.....	Bismarck	5.0	21.0
Porthill	5.0	.....	Devils Lake	4.0	.....
Spencer	16.0	.....	Williston	4.0	†
Vienna Mine	47.0	.....	Ohio.	.....	.....
Iowa.	.....	.....	Sandusky	0.0	6.0
Charles City	5.0	.....	Oregon.	.....	.....
Davenport	0.0	10.0	Government Camp	36.0	.....
Des Moines	T.	10.0	Imperial Mine	42.0	.....
Dubuque	T.	15.0	Pennsylvania.	.....	.....
Keokuk	0.0	5.5	Emporium	4.0	.....
Sioux City	T.	10.0	Erie	2.0	6.0
Maine.	.....	.....	Gettysburg	10.0	.....
Cornish	18.0	.....	Harrisburg	5.0	†
Eastport	2.0	0.0	Huntingdon	13.0	.....
Gardiner	11.0	12.0	Pittsburgh	2.0	0.0
Greenville	14.0	23.0	Reading	5.0	0.0
Houlton	18.0	.....	Williamsport	11.0	.....
Portland	13.0	0.0	South Dakota.	.....	.....
Maryland.	.....	.....	Huron	T.	13.5
Frederick	8.0	.....	Pierre	T.	16.0
Oakland	10.0	.....	Rapid City	3.0	.....
Princess Anne	1.0	.....	Utah.	.....	.....
Massachusetts.	.....	.....	Logan	6.0	.....
Amherst	7.0	.....	Vermont.	.....	.....
Michigan.	.....	.....	Brattleboro	8.0	13.0
Alpena	8.0	9.0	Burlington	7.0	*
Cadillac	15.0	.....	Northfield	13.0	.....
Chatham	19.0	.....	Virginia.	.....	.....
Detroit	T.	7.0	Richmond	3.0	0.0
Escanaba	8.0	10.0	Washington.	.....	.....
Harrisville	8.0	.....	Stampede	15.0	.....
Houghton	18.0	9.5	Walla Walla	6.0	.....
Humboldt	28.0	.....	West Virginia.	.....	.....
Iron River	23.0	.....	Elkins	6.0	0.0
Ironwood	36.0	.....	Wisconsin.	.....	.....
Maple Ridge	18.0	.....	Green Bay	7.0	12.0
Menominee	12.0	.....	La Crosse	4.0	15.0
Port Huron	2.0	8.0	Medford	14.0	.....
Saginaw	T.	8.0	Park Falls	28.0	.....
St. Ignace	8.0	.....	Wausau	13.0	11.5
Sault Ste. Marie	16.0	6.5	Wyoming.	.....	.....
Minnesota.	.....	.....	Alta	12.0	.....
Canby	2.0	.....	Lander	6.0	.....
Duluth	5.0	17.0	Sheridan	8.0	.....
Grand Meadows	6.0	.....	South Pass City	26.0	.....
Leech Lake Dam	12.0	.....	Yellowstone Park	14.0	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.



Note.—This bulletin is based on data from regular Weather Bureau and selected cooperative stations. Shaded portions represent areas covered with snow; lines indicate depths in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains; beyond the figures shown by reports from regular Weather Bureau and a few special cooperative stations.

As far as practicable all reports of snow and ice are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 4.

WASHINGTON, D. C., JANUARY 24, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., JANUARY 23, 1922.

The most pronounced feature of the weather during the week just closed has been the very general prevalence of severe cold in many localities. This was particularly the case over the Plateau and Pacific Coast States, where it has remained unseasonably cold for a considerable period, and severe frosts have occurred in the southern portions of California and Arizona. In the great central valleys severe cold set in near the end of the week and at the close had extended into most southern and eastern districts, the temperatures along the northern border from the Great Lakes westward to central Montana at the morning observation of the 23d ranging from 20° to nearly 40° below zero.

No well developed storm crossed any large extent of territory during the week and precipitation was not heavy save over a few small areas.

The principal periods of precipitation were from the 18th to 20th, when more or less rain or snow occurred from the northern and central Rocky Mountain districts eastward to the Atlantic coast, and on the 21st and 22d when precipitation, moderately heavy in portions of the Gulf States, occurred from the Mississippi Valley eastward, except near the south Atlantic and east Gulf coasts.

DEPTH OF SNOW.

Aside from a small area in the lower Missouri Valley and thence eastward over the northern portions of Missouri and the northern drainage area of the Ohio River, bare last week, but which now has a moderate snow cover, and a small area from southwestern Virginia northeastward along the Atlantic coast to southern New York, which was lightly covered a week ago, but which is now bare, the snow covered area remains about as reported last week.

There was a general increase in the snow depth in all districts where snow was reported last week, except over the Middle Atlantic States where there was a reduction amounting in portions of Pennsylvania and western Maryland to as much as 10 inches.

Considerable increases were reported from the northern mountain districts of the West, but in the central and southern portions the increases were slight. As previously reported, there is a marked deficiency of snow in the mountains of Arizona and New Mexico and portions of adjoining States, and the amounts in the central portions of the mountain regions continue generally less than normal.

A considerable portion of the winter wheat area east of the Mississippi River now has a moderate snow-cover, but west of that river, particularly over the Great Plains area, the ground is generally bare.

ICE IN RIVERS AND HARBORS.

Continued cold favored the formation of considerable additional ice on practically all northern streams and lakes over the amounts reported a week ago. The largest increases were in the middle Missouri Valley and the Great Lakes region, where they ranged generally from 3 to 7 inches, or slightly more. There was some extension southward and ice of considerable thickness is reported from points in the interior of the Middle Atlantic States and over the northern drainage of the Ohio River.

The week was favorable for ice harvest and this work was completed in some instances. In portions of southern New England, however, there was some delay toward the end of the week due to rising temperature.

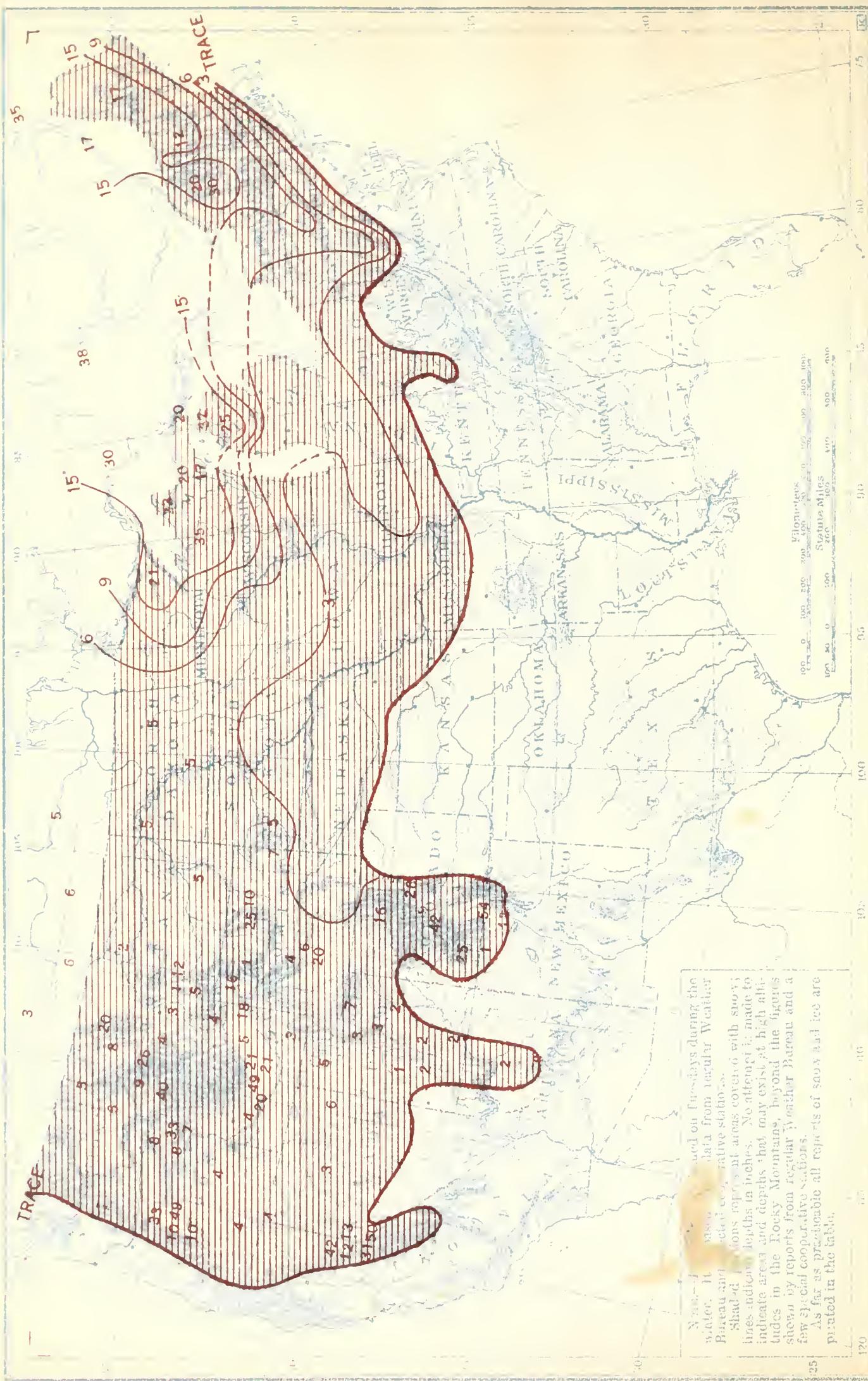
F. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 23, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>Arizona.</i>	<i>Inches</i>	<i>Inches</i>	<i>Montana—Contd.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff	6	.....	Miles City	5	.....
Grand Canyon	2	.....	Missoula	4	.....
<i>California.</i>			<i>Nebraska.</i>		
Emigrant Gap	31	.....	Omaha	T.	17.0
Portola	13	.....	Tekamah	2	.....
Sierraville	12	.....	<i>Nevada.</i>		
Summit	50	.....	Elko	6	.....
<i>Colorado.</i>			Winnemucca	3	.....
Cumbres	54	.....	<i>New Hampshire.</i>		
Durango	1	.....	Concord	10	17.0
Leadville	9	.....	<i>New Mexico.</i>		
Rico	25	.....	Chama	12	.....
<i>Connecticut.</i>			<i>New York.</i>		
Hartford	4	12.0	Albany	8	9.5
<i>Idaho.</i>			Alfred	6	.....
Boise	4	.....	Beaver River	30	.....
Hailey	21	.....	Binghamton	6	.....
Mackay	5	.....	Buffalo	5	7.0
Pocatello	3	.....	Canton	6	.....
Spencer	18	.....	Lowville	18	.....
Vienna Mine	49	.....	Malone	10	.....
<i>Illinois.</i>			Poughkeepsie	5	.....
Decatur	3	.....	Rochester	8	8.0
Peoria	2	4.0	Rome	18	.....
Salem	2	.....	<i>North Dakota.</i>		
Springfield	3	.....	Bismarck	5	22.0
<i>Indiana.</i>			Williston	5	28.0
Fort Wayne	7	.....	<i>Ohio.</i>		
Indianapolis	2	.....	Cleveland	2	5.0
Royal Center	5	.....	Dayton	2	0.0
Terre Haute	2	2.5	Toledo	4	7.0
<i>Iowa.</i>			Wapakoneta	2	.....
Charles City	5	.....	<i>Oregon.</i>		
Davenport	T.	13.5	Detroit	10	.....
Keokuk	2	7.5	Government Camp	49	.....
Sioux City	T.	12.5	Hilgard	8	.....
<i>Maine.</i>			Sled Springs	33	.....
Gardiner	12	14.0	Wallowa	7	.....
Greenville	17	24.0	<i>Pennsylvania.</i>		
Portland	14	0.0	Erie	2	7.0
<i>Michigan.</i>			Franklin	4	.....
Alpena	8	8.0	Harrisburg	1	8.0
Battle Creek	6	.....	Huntingdon	8	.....
Cadillac	16	.....	Johnstown	4	.....
Detroit	2	10.0	Towanda	9	.....
Escanaba	9	15.0	Williamsport	8	.....
Grand Haven	4	.....	<i>South Dakota.</i>		
Harrisville	10	.....	Huron	2	18.0
Houghton	23	10.5	Rapid City	5	.....
Mackinaw	32	.....	Yankton	2	13.0
Mancelona	25	.....	<i>Utah.</i>		
Marquette	20	3.0	Logan	6	.....
Menominee	12	.....	Provo	3	.....
Newberry	13	.....	Salt Lake City	3	.....
Sault Ste. Marie	20	13.5	<i>Vermont.</i>		
<i>Minnesota.</i>			Brattleboro	11	14.5
Duluth	8	16.0	Burlington	7	*†
Minneapolis	4	.....	<i>Washington.</i>		
St. Paul	2	15.0	Spokane	6	.....
Worthington	3	.....	Walla Walla	8	.....
<i>Missouri.</i>			<i>West Virginia.</i>		
Brunswick	3	.....	Romney	4	.....
Clinton	3	.....	<i>Wisconsin.</i>		
Columbia	2	.....	Green Bay	7	15.0
Hannibal	2	*	La Crosse	6	18.0
<i>Montana.</i>			Wausau	14	13.0
Findon	12	.....	<i>Wyoming.</i>		
Haugan	26	.....	Lander	6	.....
Havre	2	.....	Sheridan	10	.....
Helena	3	.....	Yellowstone Park	16	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., January 23, 1922.



Map of the central and southern United States showing the depth of snow on the ground at 8 p.m. on January 23, 1922. The map includes state boundaries and major rivers. Contours are drawn in red, with values ranging from 0 to 35 inches. Shaded areas indicate data from special cooperative stations. A legend in the bottom right corner provides conversion factors for Velocity Miles, Statute Miles, and Kilometers.

Notes: Data from regular Weather Bureau and special cooperative stations. Shaded areas represent areas covered with snow. Lines indicate depths in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond the figures shown by reports from regular Weather Bureau and a few special cooperative stations. As far as practicable all reports of snow and ice are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 5.

WASHINGTON, D. C., JANUARY 31, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., JANUARY 30, 1922.

The most important feature of the weather during the week just closed, was the remarkable and, in some cases, unprecedented snowfall over the Atlantic Coast States from the Carolinas to southern New England near the latter part. In the central portions of this area, particularly in the District of Columbia and portions of near-by States, the total snowfall for the single storm period was the greatest of which there is official record, and the 24-hour falls exceeded by far anything previously known in this section. Much delay to transportation was occasioned by the great depth of the snow.

With the exception of the above the weather of the week was such as usually occurs during the midwinter season. Rather severe cold prevailed over most districts from the Mississippi Valley eastward during the early and middle portions of the week, and it continued unusually cold in the central Plateau region and the far Southwest.

Aside from the heavy snowfall over the Middle Atlantic States, referred to above, only light and scattered precipitation, rain or snow, occurred in other portions of the country, except for locally heavy rains in the west Gulf States on the 28th and 29th and heavy rains at the lower levels, and heavy snows in the mountains of southern California on the same date.

The snowfall during the week over the mountains of the far Southwest has improved somewhat the water outlook, but the amounts are still much less than normal. Over most central and northern portions of the western mountains the amount of snow in the high ranges is close to normal.

A considerable portion of the northern winter wheat States now has a moderate snow cover, but in the western Plains wheat has been exposed to severe cold, and drought still continues over considerable areas.

DEPTH OF SNOW.

A large area over the Middle Atlantic States and in the southern Appalachian Mountain region, bare a week ago, is now heavily covered from the severe storm of the 28th and 29th. In the districts from the Missouri Valley westward and southwestward to the mountains of California, Oregon, and Washington there was some increase in the depth of the snow cover in nearly all portions, the greatest occurring generally in the elevated portions of northern Arizona and New Mexico and the adjacent portions of California, Utah, Nevada, and Colorado. Over the upper Mississippi Valley and thence eastward to the Great Lakes and over portions of the Ohio Valley there was a moderate reduction in the snow depth during the week despite the very general prevalence of decided cold.

ICE IN RIVERS AND HARBORS.

The territory over which appreciable ice has formed on the rivers and lakes extended considerably southward during the week just closed as compared with the preceding week, due to continued cold. Also, the amounts reported show a steady increase in all sections where ice has so far been reported.

The harbors of the Great Lakes are now covered with ice ranging generally from 10 inches to two feet in thickness. Similar conditions prevail on the upper Missouri and Mississippi Rivers and their northern tributaries, and on most of the rivers and lakes of New England and northern New York.

Ice harvest continues under favorable conditions, and opportunity has been afforded for the storage of ice in practically all localities where provision is made for this work.

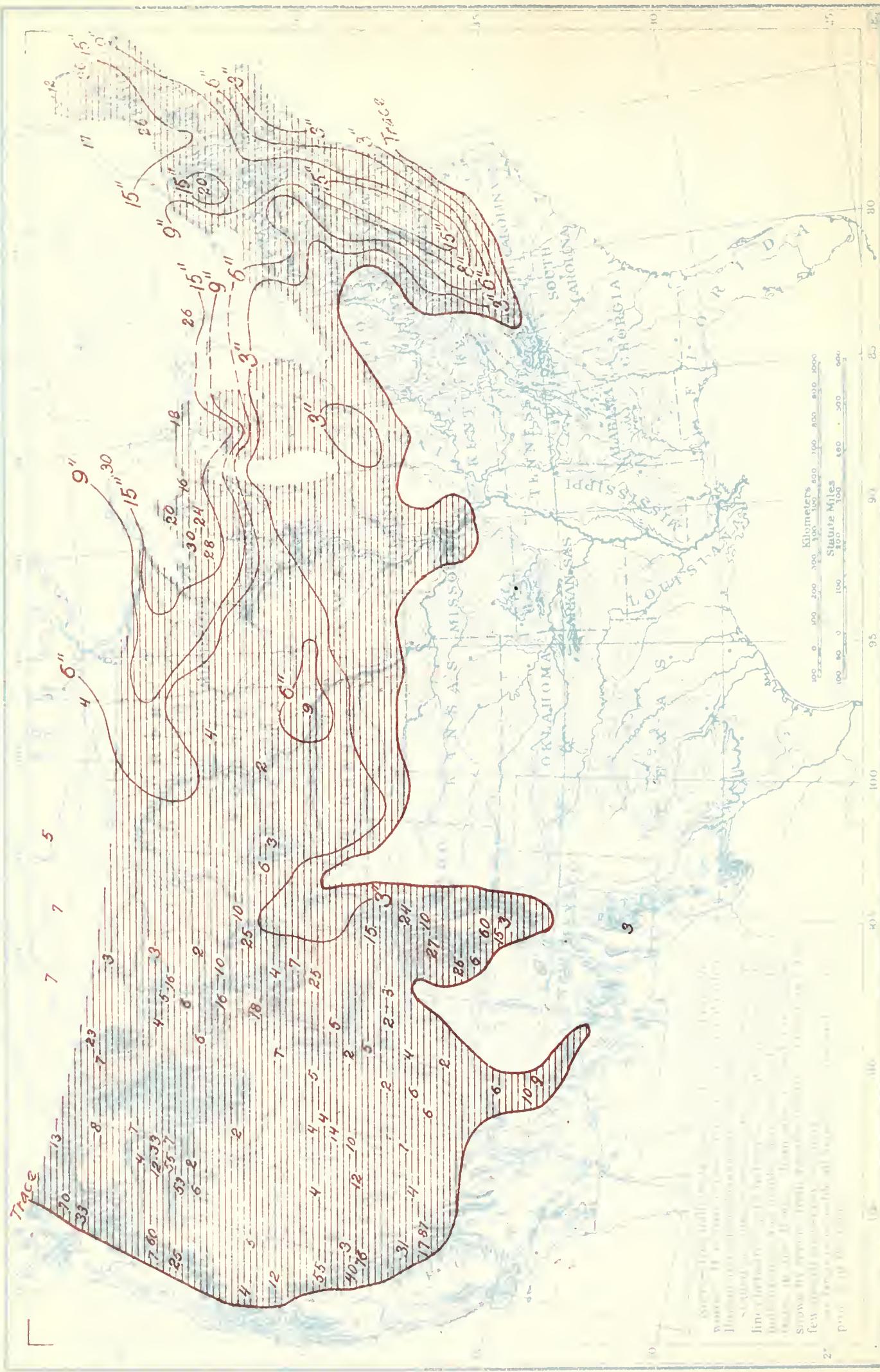
P. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 30, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	New Hampshire.	Inches	Inches
Flagstaff	9	.....	Concord	9	19.0
California.	.....	.....	Hanover	14	.....
Emigrant Gap	40	.....	Pittsburg	26	.....
Huntington Lake	87	.....	New Jersey.	.....	.....
Summit	76	.....	Atlantic City	6	.....
Colorado.	.....	.....	Bridgeton	8	.....
Cumbres	60	.....	Lakewood	8	.....
Durango	6	.....	New Mexico.	.....	.....
Leadville	10	.....	Chama	15	.....
Rio	25	.....	New York.	.....	.....
Connecticut.	.....	.....	Albany	5	11.0
Hartford	3	14.0	Beaver River	18	.....
New Haven	2	0.0	Binghamton	3	.....
Dist. of Columbia.	.....	.....	Buffalo	2	*†
Washington	19	4.0	New York	4	0.0
Idaho.	.....	.....	Oswego	6	8.0
Boise	2	.....	Rochester	7	10.0
Iowa.	.....	.....	Saranac Lake	20	.....
Charles City	3	.....	Warwick	10	.....
Creston	2	.....	North Dakota.	.....	.....
Davenport	T.	13.5	Bismarck	6	25.0
Des Moines	T.	13.0	Ellendale	4	.....
Pocahontas	6	.....	Oregon.	.....	.....
Sioux City	1	13.5	Baker	2	.....
Maine.	.....	.....	Government Camp	60	.....
Cornish	23	.....	Hilgard	12	.....
Eastport	2	0.0	Imperial Mine	55	.....
Gardiner	11	18.0	Siskiyou	4	.....
Greenville	15	26.0	Sled Springs	33	.....
Houlton	30	.....	Pennsylvania.	.....	.....
Orono	14	.....	Gettysburg	8	.....
Portland	13	0.0	Harrisburg	5	9.0
Maryland.	.....	.....	Holtwood	16	.....
Baltimore	15	0.0	Huntingdon	7	.....
Princess Anne	4	.....	Philadelphia	8	0.0
Massachusetts.	.....	.....	South Dakota.	.....	.....
Amherst	3	.....	Huron	5	18.5
Concord	7	.....	Pierre	2	21.0
Michigan.	.....	.....	Yankton	9	17.0
Adrian	2	.....	Utah.	.....	.....
Alpena	4	12.0	Modena	6	.....
Cadillac	16	.....	Salt Lake City	2	.....
Detroit	T.	11.0	Vermont.	.....	.....
Escanaba	7	18.0	Brattleboro	8	16.0
Harrisville	8	.....	Burlington	5	10.0
Houghton	20	10.0	Northfield	12	.....
Iron River	24	.....	St. Johnsbury	16	.....
Ironwood	30	.....	Virginia.	.....	.....
Ludington	1	.....	Callaville	14	.....
Marquette	16	8.0	Fredericksburg	20	.....
St. Ignace	12	.....	Lynchburg	10	0.0
Sault Ste. Marie	18	11.5	Richmond	8	0.0
Minnesota.	.....	.....	Woodstock	5	.....
Duluth	5	24.5	Wytheville	1	.....
Minneapolis	2	.....	Washington.	.....	.....
St. Paul	2	16.0	Cascade Tunnel	70	.....
Montana.	.....	.....	Laurier	13	.....
Belton	23	.....	Spokane	8	.....
Billings	2	.....	Stampede	33	.....
Haugan	24	.....	Walla Walla	4	.....
Havre	3	.....	Wisconsin.	.....	.....
Helena	4	.....	Green Bay	5	16.0
Kalispell	7	.....	La Crosse	4	19.0
Miles City	4	.....	Wausau	14	14.5
Nebraska.	.....	.....	Wyoming.	.....	.....
North Platte	5	.....	Alta	18	.....
Valentine	5	.....	Lander	7	.....
Nevada.	.....	.....	Sheridan	10	.....
Tonopah	4	.....	South Pass City	25	.....
Winnemucca	4	.....	Yellowstone Park	16	.....

*Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T indicates trace.

Depth of Snow on Ground, 8 p. m., January 30, 1922.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 6.

WASHINGTON, D. C., FEBRUARY 7, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., FEBRUARY 6, 1922.

The week just closed had moderate winter temperatures in practically all portions of the country, save in the far Southwest where it was decidedly cold on several dates.

Precipitation was well distributed and occurred at frequent intervals over much of the country, but the amounts were mostly light.

A storm of wide extent had its origin over the far Southwest at the beginning of the week, and during Wednesday and Thursday moved northeastward and eastward to the Atlantic coast, attended by light snows over most northern districts from the Plateau region to the Great Lakes, and by moderate to heavy rains in the central and southern portions of the country.

The last two days of the week brought some heavy rains in the South Atlantic and Gulf States, and generally light rains in the Ohio Valley and thence northeast to New England. At the same time light snows were reported over extensive areas from the northern Plateau region eastward to the Great Lakes.

DEPTH OF SNOW.

The important feature concerning the snow cover during the week just closed is the rapid disappearance of the unusual falls of January 28 and 29 over portions of the Middle Atlantic Coast States. Sections of western North Carolina, central Virginia, Maryland, and eastern Pennsylvania having a covering ranging up to two feet or more are now practically bare, and there were large reductions in the depths over adjoining districts.

Over most of New England there was a general increase of the snow depth, and likewise from the Great Lakes westward, and over most of the Rocky Mountain and Plateau regions. In the mountains of southern California there were some heavy snows during the week and these extended into northern Arizona and portions of Colorado. In the mountains of central and northern California and western Oregon there was a general reduction of the snow depth, but probably without much loss in water content.

The snow cover over the winter wheat areas is limited mostly to the more northern districts as indicated on the chart of snow depth.

ICE IN RIVERS AND HARBORS.

In the absence of severe cold the formation of additional ice over the amounts reported a week ago was confined to the more northern districts, and even here the increases were slight. As a rule, the ice conditions on the Missouri and upper Mississippi Rivers remain about as reported last week, with an average slight increase. Few changes were noted in the amounts of ice reported on the harbors of the Great Lakes, although on the lower Lakes there was a slight average decrease. Some new ice formed over the lakes and streams of northern New England, but there was generally a small decrease over the southern portions of the section.

South of the Hudson River there is now less ice than was reported a week ago, and the amounts previously reported on the northern tributaries of the Ohio have disappeared.

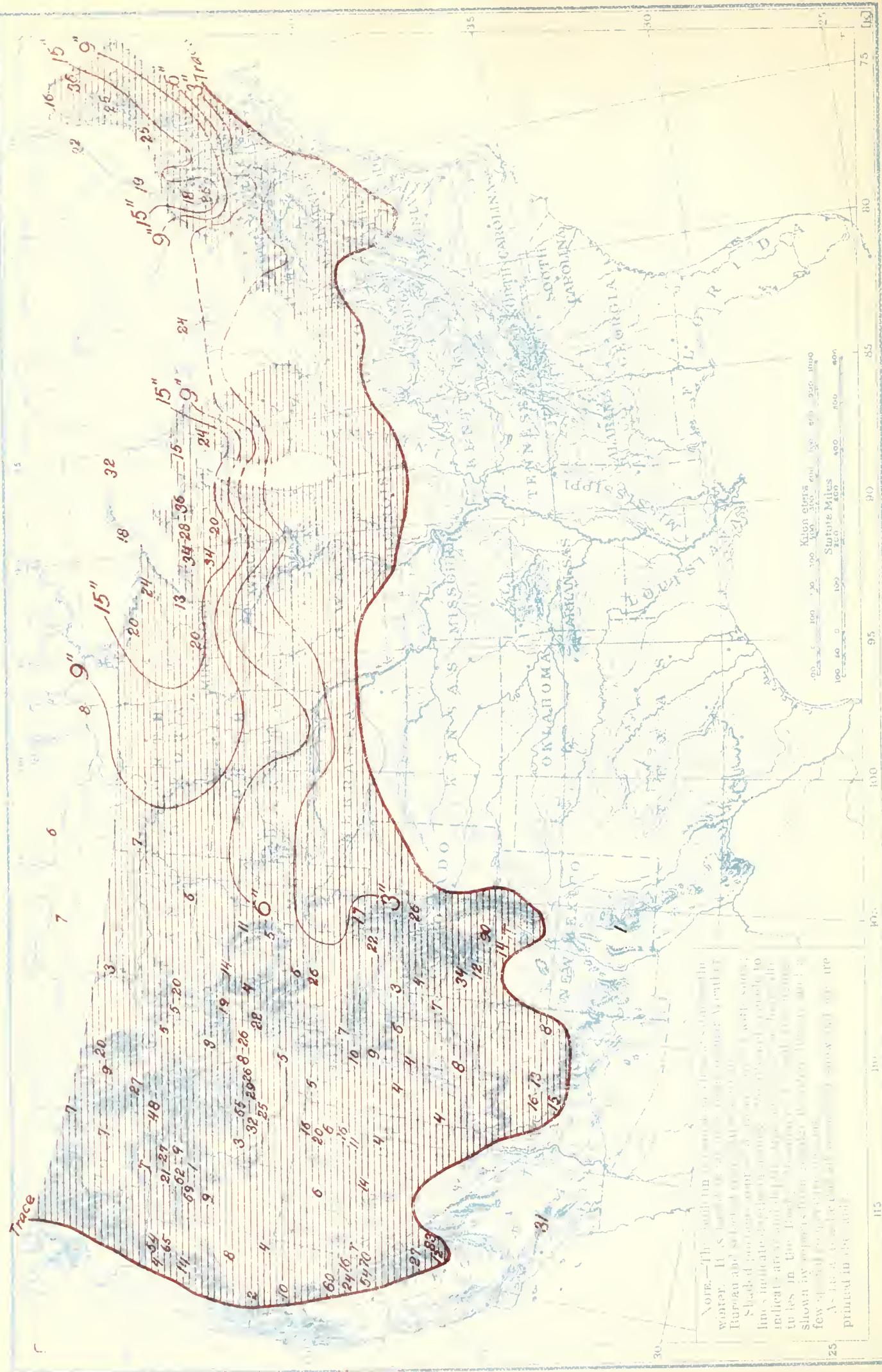
Conditions continued generally favorable for ice harvest and this work was completed in many of the large producing regions, the quality of the ice being unusually fine.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 6, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	New Hampshire.	Inches	Inches
Flagstaff	13	.....	Berlin	6	.....
California.			Concord	9	18.0
Huntington Lake	83	.....	Hanover	12	.....
Inskip	60	.....	New Mexico.		
Squirrel Inn	31	.....	Chama	14	.....
Summit	70	.....	Cloudcroft	1	.....
Colorado.			New York.		
Cumbres	90	.....	Albany	T.	10.5
Durango	12	.....	Alfred	5	.....
Grand Junction	4	.....	Beaver River	25	.....
Connecticut.			Buffalo	1	7.0
Hartford	T.	14.0	Ogdensburg	5	.....
Dist. of Columbia.			Oswego	4	7.0
Washington	2	†	Plattsburg	6	.....
Idaho.			Poughkeepsie	2	.....
Boise	3	.....	Rochester	4	10.0
Pocatello	5	.....	Syracuse	3	.....
Porthill	7	.....	North Dakota.		
Spencer	26	.....	Bismarck	11	26.0
Vienna Mine	55	.....	Devils Lake	10	.....
Iowa.			Ellendale	9	.....
Charles City	2	.....	Williston	7	27.0
Davenport	T.	15.0	Ohio.		
Des Moines	T.	12.0	Cleveland	T.	5.5
New Hampton	4	.....	Marion	T.	.....
Pocahontas	3	.....	Toledo	T.	7.0
Sioux City	2	15.5	Oregon.		
Maine.			Baker	1	.....
Eastport	3	0.0	Billings	8	.....
Gardiner	10	18.0	Government Camp	65	.....
Greenville	25	26.5	Hilgard	21	.....
Houlton	36	.....	Imperial Mine	62	.....
Portland	10	0.0	Siskiyou	2	.....
Van Buren	16	.....	Sled Springs	37	.....
Maryland.			Pennsylvania.		
Baltimore	3	0.0	Erie	1	11.0
Michigan.			Franklin	1	.....
Alpena	5	13.0	Freeland	4	.....
Detroit	T.	13.0	Harrisburg	T.	7.0
Escanaba	6	19.0	Holtwood	1	.....
Grand Rapids	2	.....	South Dakota.		
Harrisville	4	.....	Huron	7	19.5
Houghton	23	8.5	Pierre	4	21.0
Humboldt	36	.....	Rapid City	3	.....
Ironwood	34	.....	Yankton	8	18.0
Lansing	1	.....	Utah.		
Ludington	3	.....	Modena	4	.....
Newberry	15	.....	Salt Lake City	10	.....
Saginaw	T.	13.0	Vermont.		
Sault Ste. Marie	16	11.5	Brattleboro	10	14.0
Minnesota.			Burlington	7	12.0
Duluth	13	26.0	Northfield	16	.....
Minneapolis	4	.....	St. Johnsbury	16	.....
Moorhead	9	25.0	Washington.		
St. Paul	5	13.0	Spokane	7	.....
Montana.			Wisconsin.		
Belton	20	.....	Ashland	19	.....
Findon	20	.....	Fon du Lac	2	.....
Haugan	27	.....	Green Bay	3	16.0
Havre	3	.....	La Crosse	2	19.0
Helena	5	.....	Park Falls	34	.....
Kalispell	9	.....	Wausau	14	15.0
Miles City	6	.....	Wyoming.		
Nebraska.			Alta	22	.....
Oakdale	3	.....	Casper	1	.....
Omaha	0	21.0	Evanston	7	.....
Tekamah	2	.....	Lander	6	.....
Valentine	2	.....	Newcastle	7	.....
Nevada.			Sheridan	11	.....
Winnemucca	6	.....	Yellowstone Park	19	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable. T. indicates trace.

Depth of Snow on Grouse, 3 p.m., February 6, 1922.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 7.

WASHINGTON, D. C., FEBRUARY 14, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., FEBRUARY 13, 1922.

A storm area over southern Louisiana at the close of the preceding week moved rapidly northeastward increasing in intensity and at the morning observation of Tuesday was central off the North Carolina coast, attended by general rains over the east Gulf and South Atlantic States, and by snow from North Carolina and eastern Tennessee northward to eastern Pennsylvania. At the same time light snow was falling in the Great Lakes region and portions of the Ohio Valley. The storm moved rapidly northeastward during the following 24 hours, but without material snowfall north of Maryland.

During the middle and latter portions of the week there was frequent precipitation in the far West, the falls being quite heavy about Thursday in California, and more or less rain or snow continued over the central and northern districts the balance of the week, extending eastward during the last two days along the northern border, and into the Ohio Valley and northeastern districts.

Temperatures were moderate during the first part of the week over most districts, although it continued unseasonably cold in the far Southwest.

The latter part of the week brought higher temperatures in the far West, but severe cold set in over the Dakotas and surrounding districts about Saturday, and during Sunday and Monday gradually extended into most eastern and southern districts between the Rocky and Appalachian Mountains.

DEPTH OF SNOW.

There were very general, but slight increases in the snow depth over all northern districts from the Dakotas eastward. Also in central and northern California, Oregon, Nevada, and Idaho, the increases were general, and in some cases large, the greatest appearing in the mountains of central California where the depths are locally from 2 to nearly 5 feet greater than were reported a week ago.

In the far Southwest, including the mountains of southern California, northern Arizona, and the adjacent portions of Utah and Colorado, there was rapid melting during the week and the large body of snow present a week ago has diminished rapidly in depth, attended by considerable run-off and some local flooding.

The principal changes in the snow-covered area were over a narrow strip from northern Ohio westward to and including most of Nebraska where a slight covering reported a week ago has generally disappeared. Also in the far Southwest small areas that were well covered last week are now practically bare.

ICE IN RIVERS AND HARBORS.

Under the influence of temperatures somewhat above normal, there was a slight decrease in the amount of ice in the more southerly districts, where it had previously formed, from the Mississippi Valley eastward. Over the districts to the northward there was usually a general but small increase.

The Missouri, on the whole, has a somewhat heavier ice cover than was reported a week ago, while the upper Mississippi and its tributaries have somewhat less.

The upper Lakes have slightly more, and the lower Lakes less than was reported a week ago, while in New England there has been little change.

The ice harvest has been practically completed in all districts where it is usually provided for, and all reports agree that the ice was of excellent quality and harvested under the most favorable conditions.

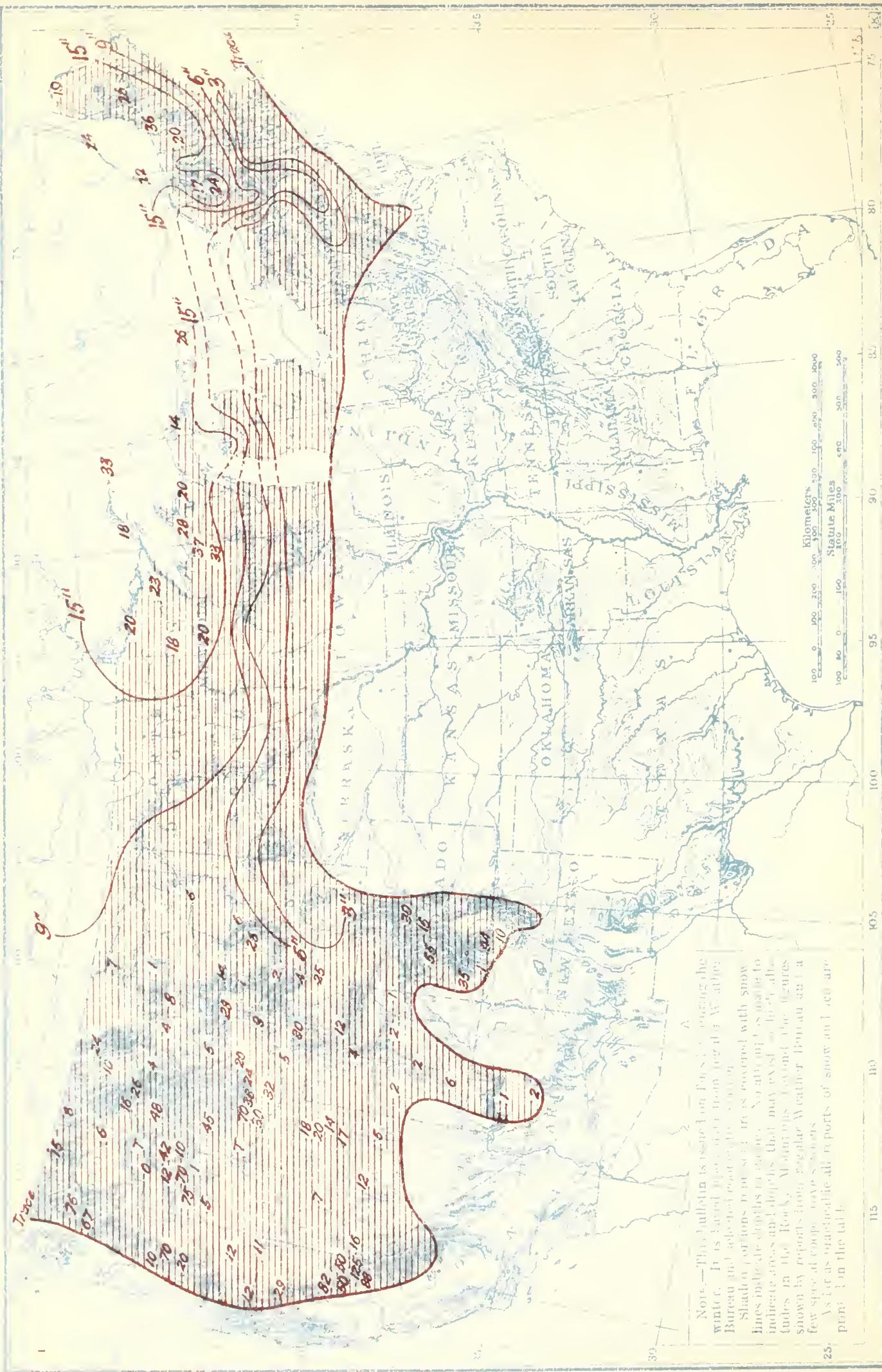
F. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 13, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>Arizona.</i>	<i>Inches</i>	<i>Inches</i>	<i>New Mexico.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff	2	.....	Chama	10	.....
<i>California.</i>			New York		
Emigrant Gap	88	.....	Albany	T.	8.0
Inskip	82	.....	Alfred	2	.....
McCloud	29	.....	Beaver River	24	.....
Mount Wilson	11	.....	Binghamton	1	.....
Portola	50	.....	Canton	3	.....
Summit	125	.....	Lowville	15	.....
<i>Connecticut.</i>			Malone	8	.....
New Haven	2	0.0	Plattsburg	8	.....
West Cornwall	1	.....	Rochester	2	10.0
<i>Idaho.</i>			Rome	10	.....
Hailey	32	.....	Syracuse	3	.....
McCall	45	.....	Warwick	3	.....
Mackay	20	.....	<i>North Dakota.</i>		
Pocatello	5	.....	Bismarck	12	28.0
Porthill	8	.....	Devils Lake	10	.....
Vienna Mine	70	.....	Williston	8	30.0
<i>Iowa.</i>			<i>Ohio.</i>		
Charles City	1	.....	Cleveland	0	4.0
Davenport	0	18.0	Toledo	T.	6.0
Dubuque	T.	15.0	<i>Oregon.</i>		
Pocahontas	2	.....	Baker	1	.....
Sioux City	T.	17.0	Billings	12	.....
<i>Maine.</i>			Hilgard	12	.....
Cornish	18	.....	Imperial Mine	70	.....
Eastport	4	0.0	Lakeview	11	.....
Greenville	26	27.0	Siskiyou	12	.....
Portland	10	0.0	Sled Springs	43	.....
Van Buren	19	.....	<i>Pennsylvania.</i>		
<i>Massachusetts.</i>			Erie	T.	9.0
Boston	1	0.0	Harrisburg	T.	6.5
Williamstown	1	.....	Huntingdon	3	.....
<i>Michigan.</i>			Johnstown	2	.....
Alpena	7	*	Mifflintown	3	.....
Detroit	2	13.0	Towanda	1	.....
Escanaba	6	20.0	Warren	2	.....
Grand Haven	2	.....	<i>South Dakota.</i>		
Grand Rapids	2	.....	Huron	8	21.0
Houghton	20	11.0	Pierre	5	22.0
Ludington	4	.....	Rapid City	2	.....
Menominee	9	.....	Yankton	4	20.0
Port Huron	1	11.5	<i>Utah.</i>		
Saginaw	2	14.0	Salt Lake City	4	.....
Sault Ste. Marie	14	14.5	Watson	1	.....
<i>Minnesota.</i>			<i>Vermont.</i>		
Canby	11	.....	Brattleboro	7	15.0
Collegeville	11	.....	Burlington	5	14.0
Duluth	16	26.5	Northfield	16	.....
Fort Ripley	20	.....	St. Johnsbury	20	.....
International Falls	20	.....	<i>Washington.</i>		
Leech Lake Dam	18	.....	Cascade Tunnel	76	.....
Minneapolis	3	.....	Laurier	15	.....
Moorhead	9	19.0	Port Angeles	1	.....
St. Paul	3	16.0	Spokane	6	.....
<i>Montana.</i>			Stampede	67	.....
Belton	24	.....	<i>Wisconsin.</i>		
Haugan	26	.....	Green Bay	6	15.5
Havre	7	.....	La Crosse	2	17.0
Helena	4	.....	Madison	1	.....
Kalispell	10	.....	Milwaukee	1	0.0
Miles City	6	.....	Wausau	16	15.5
Missoula	4	.....	<i>Wyoming.</i>		
<i>Nevada.</i>			Alta	9	.....
Elko	14	.....	Evanston	12	.....
Winnemucca	7	.....	Lander	4	.....
<i>New Hampshire.</i>			Newcastle	4	.....
Berlin	8	.....	Sheridan	6	.....
Concord	9	20.0	South Pass City	25	.....
Hanover	15	.....	Yellowstone Park	28	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., February 13, 1922.



Note.—This bulletin is issued from the office of the Director of the Weather Bureau and is based upon reports from the Weather Bureau.

Shaded areas represent areas covered with snow 30 inches or more in depth. Solid lines indicate areas covered with snow 15 inches or more in depth. Dotted lines indicate areas that may exist in the altitudes in the Rock Mountains. Figures shown by reports from regular Weather Bureau stations are few. Special reports from observers are given in the table.

As far as practicable all reports of snow are given in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 8.

WASHINGTON, D. C., FEBRUARY 21, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., FEBRUARY 20, 1922.

The more important features of the weather during the week just closed were the heavy rains near the beginning over the east Gulf and Atlantic Coast States, turning to snow as the storm moved northward; the severe cold about the same time or immediately following over much of the country from the Great Plains eastward; the rapid change to warmer weather near the end of the week; and the general rains or snows in the far Northwest during most of the week, becoming heavy toward the end in portions of northern California.

DEPTH OF SNOW.

The snow depths show irregular variations as compared with the previous week. In portions of the Atlantic Coast States from Maryland to southern New England there was a general but small increase, and similar increases were reported from Minnesota and the upper Lake region. Elsewhere from the Rocky Mountains eastward there was a very general decrease in the depth of snow cover. In the central Rocky Mountain region and the adjacent portions of the central Plateau there were material reductions in the snow depths, amounting to as much as two feet in a few instances. In the mountains of southern Idaho there were some marked increases in the snow depths and similar conditions were reported from a few points in northern California, Oregon, and Washington, although decreases were likewise noted in these States.

No important change occurred during the week in the extent of the snow-covered area, save for a narrow strip from northern Iowa eastward over the southern portions of Minnesota, Wisconsin, and Michigan to the western portions of Pennsylvania and New York, where the light covering of a week ago has disappeared, and in portions of southern Utah and northern Arizona, where considerable depths at the lower levels disappeared.

In the western mountain districts where the summer's water supply depends so greatly upon the amount and condition of the snow stored in the high ranges, conditions have improved materially during recent weeks. This is particularly true in California, where the outlook at the middle of the winter had been rather unsatisfactory. The heavy snows of recent weeks have greatly added to the depths and the continued cool weather has prevented appreciable run-off, so that the outlook at the present time is for an ample supply of water during the coming summer.

In Arizona and other portions of the Southwest conditions likewise recently improved, although usually the amount of stored snow is less than normal.

In other portions of the mountain regions the outlook continues favorable, as a rule, for a good flow of water during the coming summer.

ICE IN RIVERS AND HARBORS.

The severe cold during portions of the week just closed caused a further accumulation of ice over most of the rivers and lakes in the northern districts, but in other localities, where ice still remained a week ago, there was either a slight reduction or no appreciable change.

The favorable weather conditions afforded further opportunity for the completion of the ice harvest, where this work had not already been accomplished.

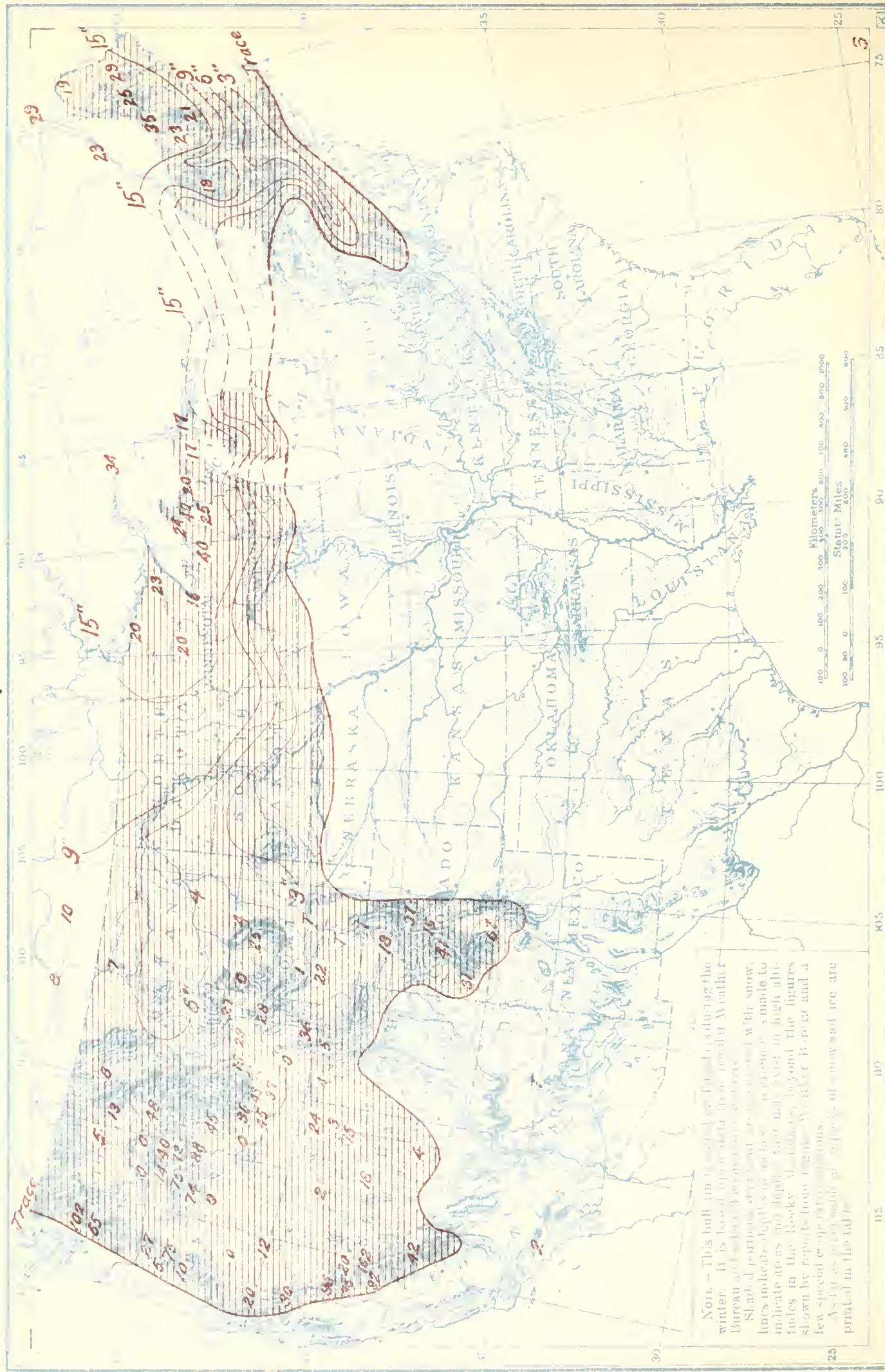
P. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 20, 1922.

Stations	Snow.	Ice in rivers, har- bors, etc.	Stations	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	Nevada.	Inches	Inches
Flagstaff.....	T.		Arthur.....	16	.....
California.			Austin.....	18	.....
Emigrant Gap.....	92	.....	New Hampshire.		
Inskip.....	96	.....	Berlin.....	8	.....
McCloud.....	30	.....	Concord.....	10	19.0
Portola.....	20	.....	Durham.....	5	.....
Sierraville.....	36	.....	Hanover.....	16	.....
Summit.....	162	.....	Pittsburg.....	35	.....
Colorado.			New Mexico.		
Cumbres.....	67	.....	Chama.....	5	.....
Dillon.....	37	.....	New York.		
Leadville.....	15	.....	Albany.....	T.	9.0
Steamboat Springs.....	18	.....	Beaver River.....	18	.....
Connecticut.			Buffalo.....	T.	9.0
Hartford.....	T.	12.5	Herkimer.....	8	.....
West Cornwall.....	4	.....	Lowville.....	12	.....
Idaho.			Ogdensburg.....	5	.....
Hailey.....	37	.....	Oswego.....	1	2.0
Ketchum.....	43	.....	Plattsburg.....	8	.....
McCall.....	45	.....	Rochester.....	1	10.0
Mackay.....	15	.....	North Dakota.		
North Star Mine.....	38	.....	Bismarck.....	11	30.0
Soldier Creek.....	45	.....	Devils Lake.....	8	.....
Spencer.....	29	.....	Ellendale.....	10	.....
Vienna Mine.....	96	.....	Williston.....	5	31.5
Iowa.			Ohio.		
Dubuque.....	0	13.0	Cleveland.....	0	6.5
Estherville.....	2	.....	Sandusky.....	0	8.0
Sioux City.....	0	21.5	Toledo.....	0	5.0
Maine.			Oregon.		
Cornish.....	21	.....	Cornucopia.....	88	.....
Eastport.....	9	0.0	Detroit.....	10	.....
Gardiner.....	17	20.0	Goverment Camp.....	75	.....
Greenville.....	25	29.0	Hilgard.....	14	.....
Millinocket.....	29	.....	Imperial Mine.....	75	.....
Orono.....	17	.....	Lakeview.....	12	.....
Portland.....	13	0.0	Wallowa.....	12	.....
Van Buren.....	19	.....	Pennsylvania.		
Massachusetts.			Erie.....	0	6.0
Concord.....	7	.....	Harrisburg.....	T.	6.0
Holyoke.....	4	.....	Huntingdon.....	5	.....
Michigan.			Rhode Island.		
Alpena.....	3	6.0	Providence.....	1	0.0
Cadillac.....	16	.....	South Dakota.		
Detroit.....	0	11.0	Huron.....	4	21.0
Escanaba.....	8	23.5	Pierre.....	1	22.5
Houghton.....	24	17.0	Yankton.....	1	20.0
Humboldt.....	40	.....	Utah.		
Iron River.....	25	.....	Kelton.....	4	.....
Ironwood.....	40	.....	Logan.....	5	.....
Mackinaw.....	21	.....	Vermont.		
Menominee.....	12	.....	Brattleboro.....	6	15.0
Newberry.....	17	.....	Burlington.....	3	15.5
Port Huron.....	0	11.5	Northfield.....	13	.....
Saginaw.....	0	14.0	St. Johnsbury.....	23	.....
St. Ignace.....	14	.....	Washington.		
Sault Ste. Marie.....	17	16.5	Cascade Tunnel.....	102	.....
Minnesota.			Spokane.....	5	.....
Duluth.....	16	29.0	Stampede.....	65	.....
Minneapolis.....	3	.....	West Virginia.		
Moorhead.....	8	22.0	Romney.....	2	.....
St. Paul.....	3	10.0	Wisconsin.		
Montana.			Green Bay.....	4	16.0
Havre.....	7	.....	Wausau.....	17	16.0
Helena.....	1	.....	Wyoming.		
Kalispell.....	8	.....	Alta.....	28	.....
Miles City.....	4	.....	Newcastle.....	3	.....
Nebraska.			Sheridan.....	4	.....
Omaha.....	0	22.0	South Pass City.....	22	.....
Valentine.....	1	.....	Yellowstone Park.....	27	.....

*Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., February 20, 1922



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 9.

WASHINGTON, D. C., FEBRUARY 28, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., FEBRUARY 27, 1922.

Rapid and important changes, particularly over the central and northern districts, were the important weather factors during the week just ended.

Near the beginning a storm of wide extent moved from the southwest toward the Great Lakes, and by Thursday morning was central over lower Michigan attended by rains over a wide area to the southward and by snow and high winds to the northward and westward. This storm moved rapidly eastward, attended by snow from the Ohio Valley to New England and by rains over most districts to the southward. This was immediately followed by much colder weather in the Plains region and Northwest, the temperature falling to 20° below zero, or lower, in portions of the upper Missouri Valley.

The middle and latter parts of the week had temperatures frequently below normal, and at the close cold weather had again advanced into the Northwest, with temperatures 30° or more below zero in portions of the upper Missouri Valley. At the same time stormy conditions had set in over the far Southwest, attended by snow in the central Mountain and Plateau districts, and by rain at the lower elevations of California and adjoining States; also snow or rain occurred during the preceding 24 hours over most districts from the Plains eastward.

DEPTH OF SNOW.

The amounts of snow on the ground, as compared with those reported a week ago, show some increases in nearly all districts having a snow cover at that time.

In the upper Lake region and thence westward to Montana and Wyoming the increases were usually large. In upper Michigan and the northern portions of Wisconsin and Minnesota the increased depths ranged from 5 to 15 inches and in a few cases from 15 to 25 inches. Nearly all of this fell during the severe storm early in the week, when high winds caused much drifting, which interfered greatly with transportation and overhead wire communication.

In the Northeastern States there was a very general but small increase, and increases of several inches, up to a foot or more, were fairly general in the Rocky Mountains and at points in the high Sierra Nevada.

In southern Idaho, Washington, and northern Oregon, considerable decreases in depth were reported.

The snow-covered area increased materially as compared with the preceding week. A large area over the middle Plains and thence eastward to the upper Ohio Valley, bare a week ago, now has a slight covering. Also considerable areas in northern New Mexico, southern Utah, and northern Arizona, also bare last week, are now covered.

ICE IN RIVERS AND HARBORS.

Continued cold over the Missouri Valley and the more northern districts to the eastward caused the formation of additional ice on most rivers and lakes of those districts. In the upper Mississippi and its tributaries there are signs of breaking up and gorges have formed at a number of points. Likewise on the Hudson and its main tributary, as well as on the rivers of southern New England, the ice is beginning to break, and it has largely disappeared from the rivers of the Atlantic coast districts south of the Hudson.

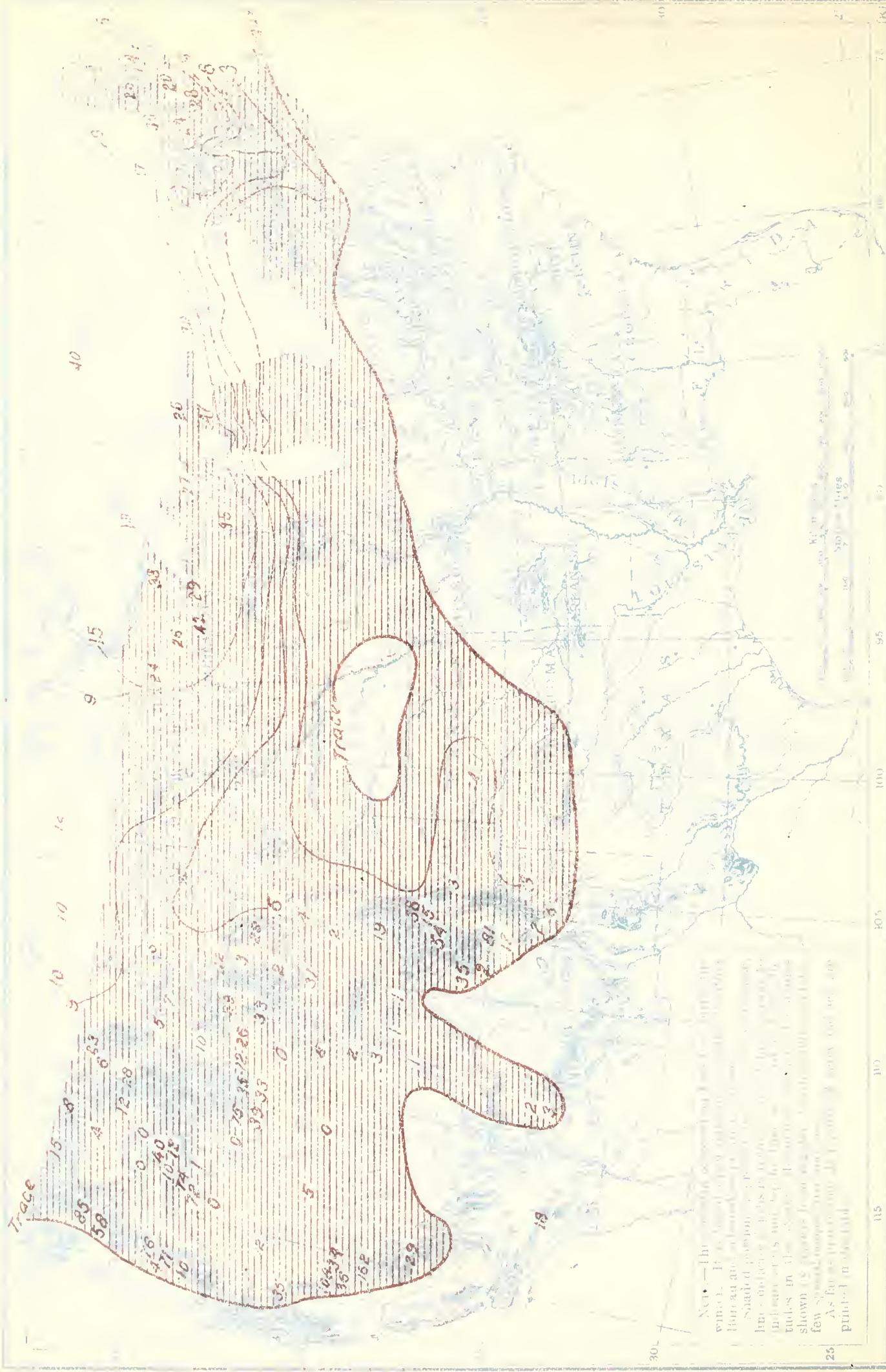
The ice in the harbors of the lower Lakes shows a material decrease as compared with that reported a week ago, and a few of the harbors are now open.

P. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 27, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	Nebraska.	Inches	Inches
Flagstaff	1	.....	Imperial	1	.....
Prescott	3	.....	Omaha	0	22.0
Williams	2	.....	Nevada.	5	.....
California.			Winnemucca		
Inskip	108	.....	New Hampshire.		
Sierraville	36	.....	Berlin	8	.....
Squirrel Inn	18	.....	Concord	16	20.0
Summit	162	.....	Pittsburg	36	.....
Colorado.			New Mexico.		
Cumbres	81	.....	Chama	17	.....
Denver	2	.....	Santa Fe	2	.....
Dillon	38	.....	New York.		
Durango	2	.....	Albany	T.	‡
Pueblo	3	0.0	Beaver River	15	.....
Connecticut.			Binghamton	2	.....
Hartford	3	‡	Buffalo	T.	9.0
New Haven	2	0.0	Canton	5	.....
Idaho.			Malone	3	.....
Hailey	33	.....	Oswego	1	2.0
Soldier Creek	39	.....	Plattsburg	10	.....
Spencer	26	.....	Saranac Lake	12	.....
Vienna Mine	75	.....	Saratoga Springs	6	.....
Iowa.			Warwick	5	.....
Charles City	1	.....	North Dakota.		
Davenport	2	*	Bismarck	17	30.0
Des Moines	T.	†	Devils Lake	8	.....
Dubuque	1	†	Williston	6	32.0
Estherville	3	.....	Ohio.		
Keokuk	1	†	Tiffin	3	.....
New Hampton	2	.....	Wapakoneta	2	.....
Sioux City	T.	22.0	Oregon.		
Kansas.			Government Camp	71	.....
Concordia	1	.....	Hilgard	10	.....
Dodge City	4	.....	Imperial Mine	74	.....
Ellinwood	3	.....	Pennsylvania.		
Liberal	2	.....	Emporium	2	.....
McPherson	2	.....	Erie	0	2.5
Wichita	2	.....	Seranton	2	.....
Maine.			Williamsport	1	.....
Cornish	28	.....	Rhode Island.		
Eastport	6	0.0	Kingston	1	.....
Gardiner	20	22.0	Providence	3	0.0
Greenville	26	33.0	South Dakota.		
Portland	23	0.0	Huron	8	22.5
Massachusetts.			Pierre	3	25.0
Amherst	2	.....	Rapid City	4	.....
Boston	1	0.0	Yankton	2	22.0
Michigan.			Texas.		
Alpena	12	10.0	Amarillo	2	.....
Detroit	0	10.0	Utah.		
Escanaba	18	26.0	Logan	8	.....
Harrisville	14	.....	Provo	3	.....
Mackinaw	47	.....	Salt Lake City	2	.....
Maple Ridge	30	.....	Vermont.		
Marquette	27	8.0	Burlington	4	17.0
Port Huron	T.	11.5	Northfield	19	.....
Saginaw	T.	10.0	Washington.		
Sault Ste. Marie	26	18.0	Cascade Tunnel	85	.....
Minnesota.			Laurier	15	.....
Duluth	29	27.0	Spokane	4	.....
Minneapolis	13	.....	Wisconsin.		
Moorhead	12	25.0	Green Bay	11	16.0
St. Paul	13	10.0	Wausau	26	16.0
Missouri.			Wyoming.		
Brunswick	2	.....	Alta	33	.....
Kansas City	T.	†	Casper	4	.....
Montana.			Cheyenne	4	.....
Havre	10	.....	Sheridan	5	.....
Helena	5	.....	South Pass City	31	.....
Kalispell	6	.....	Yellowstone Park	29	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.



New Hampshire, February 27, 1922. The map shows the depth of snow on the ground. The highest snow depths are found in the northern and western parts of the state, particularly in the White Mountains and the Connecticut River valley. The map also includes state boundaries, county lines, and a grid for reference. A legend in the bottom right corner provides a key for the depth values.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 10.

WASHINGTON, D. C., MARCH 7, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., MARCH 6, 1922.

The important features of the weather during the week just closed were the prevailing clear weather and absence of precipitation, either rain or snow, over the northern districts from the Great Lakes westward, and in the central Great Plains, Rocky Mountain and Plateau regions.

Precipitation, mostly rain, but turning into snow in the mountain districts, began early in the week over the far Southwest, and during the following few days gradually overspread the middle and southern Plains and thence eastward over the central valleys to the Atlantic coast. Snow occurred very generally over the northern portions of the precipitation area, while to the southward rains prevailed, the falls being heavy in portions of the Gulf States, lower Ohio and middle Mississippi Valleys, and Middle Atlantic States. Following this, clear weather prevailed over most districts until toward the end when light to heavy rains again occurred in portions of the east Gulf and Atlantic Coast States, and a storm area advanced into the far Northwest, attended by rain at the lower levels and by generally light snow in the adjacent mountains.

At the close of the week a storm of considerable severity was central over the upper Lakes and precipitation was general in the Mississippi and lower Ohio Valleys and portions of the Gulf States, changing to snow locally in the upper Mississippi Valley and Great Plains States.

DEPTH OF SNOW.

The snow covered area as compared with that at the end of February is now slightly reduced by the disappearance of a light covering over a narrow area extending from northeastern New Mexico to southern Michigan, and the western portions of New York and Pennsylvania. Elsewhere the snow covered area remains substantially as reported a week ago. A considerable covering that fell early in the week from the Southern Plains to the Great Lakes melted rapidly during the last few days.

In the central and northern portions of the Plateau region there was usually a small increase in the snow depths at the higher elevations, and likewise in the mountains of Oregon and Washington, and small increases are reported locally in New England. Over the Great Lakes and thence westward to the Rocky Mountains, particularly over the northern districts where no snow fell during the week, the depth of the cover has been reduced from 6 to 12 inches or more. However, deep snow still persists over North Dakota and thence eastward to the Lake Superior region.

ICE IN RIVERS AND HARBORS.

In a few northern localities ice continued to form during the week just closed, but in most other districts there was a general though usually small reduction in the amount of ice as compared with the preceding week. The upper Missouri remains solidly covered, but the Mississippi is opening, although gorged at a number of points. In the Great Lakes, Superior remains about as reported last week and similar conditions prevail at the Straits. Elsewhere the ice is moving and a number of the more southern harbors are open.

The ice in the rivers of the Atlantic Coast States south of the Hudson has apparently moved out. In New England the ice in the main rivers is slowly giving away in the lower courses, but still remains solid in the upper portions.

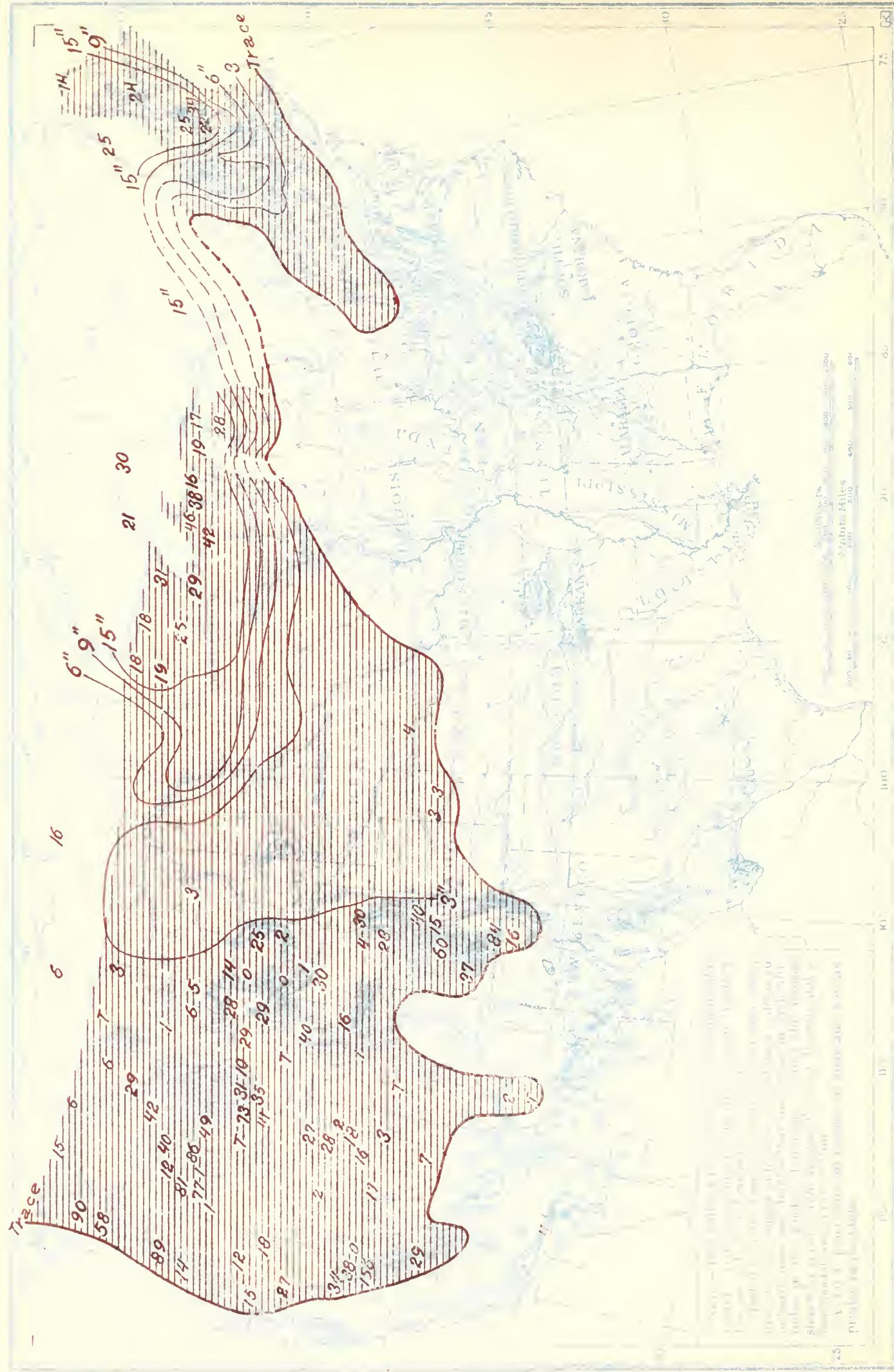
P. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 6, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>Arizona.</i>	<i>Inches</i>	<i>Inches</i>	<i>Nevada.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff	T.		Arthur	18	.....
<i>California.</i>			Austin	17	.....
McCloud	27		Hilton	16	.....
Portola	38		McGill	3	.....
Sierraville	34		North Fork	28	.....
Squirrel Inn	11		Sharp	7	.....
Summit	156		Winnemucca	2	.....
<i>Colorado.</i>			<i>New Hampshire.</i>		
Cumbres	84		Berlin	12	.....
Dillon	40		Concord	14	17.0
Leadville	15		Hanover	22	.....
Rico	37		Keene	17	.....
Steamboat Springs	28		<i>New Mexico.</i>		
<i>Idaho.</i>			Chama	16	.....
Hailey	35		Tres Piedras	1	.....
Ketchum	35		<i>New York.</i>		
McCall	49		Addison	2	.....
Mackay	10		Albany	T.	†
Soldier Creek	41		Beaver River	15	.....
Spencer	29		Buffalo	T.	12.0
Vienna Mine	73		Canton	1	.....
<i>Iowa.</i>			De Ruyter	3	.....
Sioux City	1	21.0	Herkimer	4	.....
<i>Kansas.</i>			Malone	1	.....
Dresden	3		Plattsburg	6	.....
Goodland	3		Rome	4	.....
Topeka	T.		Roxbury	6	.....
<i>Maine.</i>			Saranac Lake	12	.....
Cornish	34		Warwick	5	.....
Gardiner	17	22.0	<i>North Dakota.</i>		
Greenville	24	34.0	Bismarck	13	31.0
Portland	9	0.0	Devils Lake	2	.....
Van Buren	14		Ellendale	12	.....
<i>Massachusetts.</i>			Williston	1	34.0
Amherst	2		<i>Oregon.</i>		
Williamstown	7		Baker	1	.....
<i>Michigan.</i>			Detroit	14	.....
Alpena	5	12.0	Government Camp	89	.....
Cadillac	14		Hilgard	12	.....
Detroit	0	9.0	Imperial Mine	81	.....
Escanaba	10	26.0	Siskiyou	15	.....
Houghton	31	13.5	Sled Springs	40	.....
Humboldt	38		Wallowa	10	.....
Ironwood	42		<i>South Dakota.</i>		
Marquette	16	6.0	Huron	4	24.0
Menominee	20		Pierre	1	24.0
Newberry	19		Yankton	1	20.5
Saginaw	0	10.0	<i>Utah.</i>		
Sault Ste. Marie	17	16.0	Salt Lake City	1	.....
Victoria	46		<i>Vermont.</i>		
<i>Minnesota.</i>			Brattleboro	8	14.0
Duluth	29	28.0	Burlington	1	18.0
Grand Meadow	4		Northfield	19	.....
International Falls	18		St. Johnsbury	25	.....
Minneapolis	7		<i>Washington.</i>		
Moorhead	2	23.0	Cascade Tunnel	90	.....
St. Paul	7	*	Laurier	15	.....
<i>Montana.</i>			Stampede	58	.....
Bozeman	6		<i>Wisconsin.</i>		
Haugan	29		Green Bay	6	15.5
Havre	3		Wausau	20	14.0
Helena	1		<i>Wyoming.</i>		
Kalispell	6		Alta	29	.....
Miles City	3		Casper	1	.....
Red Lodge	14		Evanston	16	.....
<i>Nebraska.</i>			Foxpark	30	.....
Columbus	2		Newcastle	2	.....
Guide Rock	4		Sheridan	2	.....
Omaha	T.	?	South Pass City	30	.....
Tekamah	2		Yellowstone Park	28	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., March 6, 1922.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 11.

WASHINGTON, D. C., MARCH 14, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., MARCH 13, 1922.

The week just closed was notably wet in many portions of the Southern and Eastern States, and like the preceding week, was generally without material rain or snow over northern districts from the Great Lakes westward, and over much of the central portions of the Mountain, Plateau, and Pacific coast districts.

The storm advancing into the Great Lakes region at the beginning of the week passed rapidly into the lower St. Lawrence Valley, attended by high winds over the northeastern States, and by rain or snow along the Atlantic coast, in the upper Ohio drainage area, and over the Great Lakes.

As this storm was passing over the extreme Northeast, another was advancing into the far Southwest, and by Thursday morning the latter had reached central Texas, and during the following few days moved slightly northeastward to the middle Atlantic coast. This storm gave heavy snows over portions of the southern Rocky Mountains and the adjacent Plains, notably in the Texas Panhandle, and heavy rains throughout much of the Gulf, Atlantic coast, and lower Ohio Valley States. During this period light rains or snows also prevailed over the Pacific Coast and Plateau States. Near the end of the week another storm developed in the far Southwest and by the close had extended to the southern Plains, attended by general rains in much of the surrounding territory.

DEPTH OF SNOW.

Considerable snow fell during the 9th and 10th in the mountain portions of Arizona and New Mexico, and over northwestern Texas, western Oklahoma, and much of Kansas. Warm weather following rapidly melted that on the lower levels, so that by the end of the week it had generally disappeared. In the northern portions of the Plateau region there was more or less snow during the week, and the depths in the mountains were increased usually by small amounts. There was likewise some increase in the snow depths in the mountains from northern California to Washington.

In all districts from the Rocky Mountains eastward the depth of the snow cover was materially reduced, the decreases ranging from 5 to 10 inches, or more, from the upper Lakes westward to the Dakotas. Similar decreases were observed in northern New York and the interior of New England.

While the snow depths decreased materially during the week there was no great change in the snow covered area, save in the Great Plains, where a large area from northern Kansas and eastern Colorado to central Montana, with a moderate covering a week ago, is now bare.

ICE IN RIVERS AND HARBORS.

No material amount of new ice formed during the week, and the moderate warmth favored a slow, but general reduction in that still remaining on the streams and lakes of the more northern districts. In the absence of heavy rains over northern districts the ice appears to be moving out of the rivers slowly and without serious gorging.

In the Great Lakes, the ice remains solid in the more important harbors of Superior, and generally in the Straits portions of northern Huron and Michigan. In other portions of the last named lakes the ice fields are moving with the winds, and similar conditions prevail on Lakes Erie and Ontario, and the harbors on these lakes are generally free, as well as those of the southern portions of Lakes Michigan and Huron.

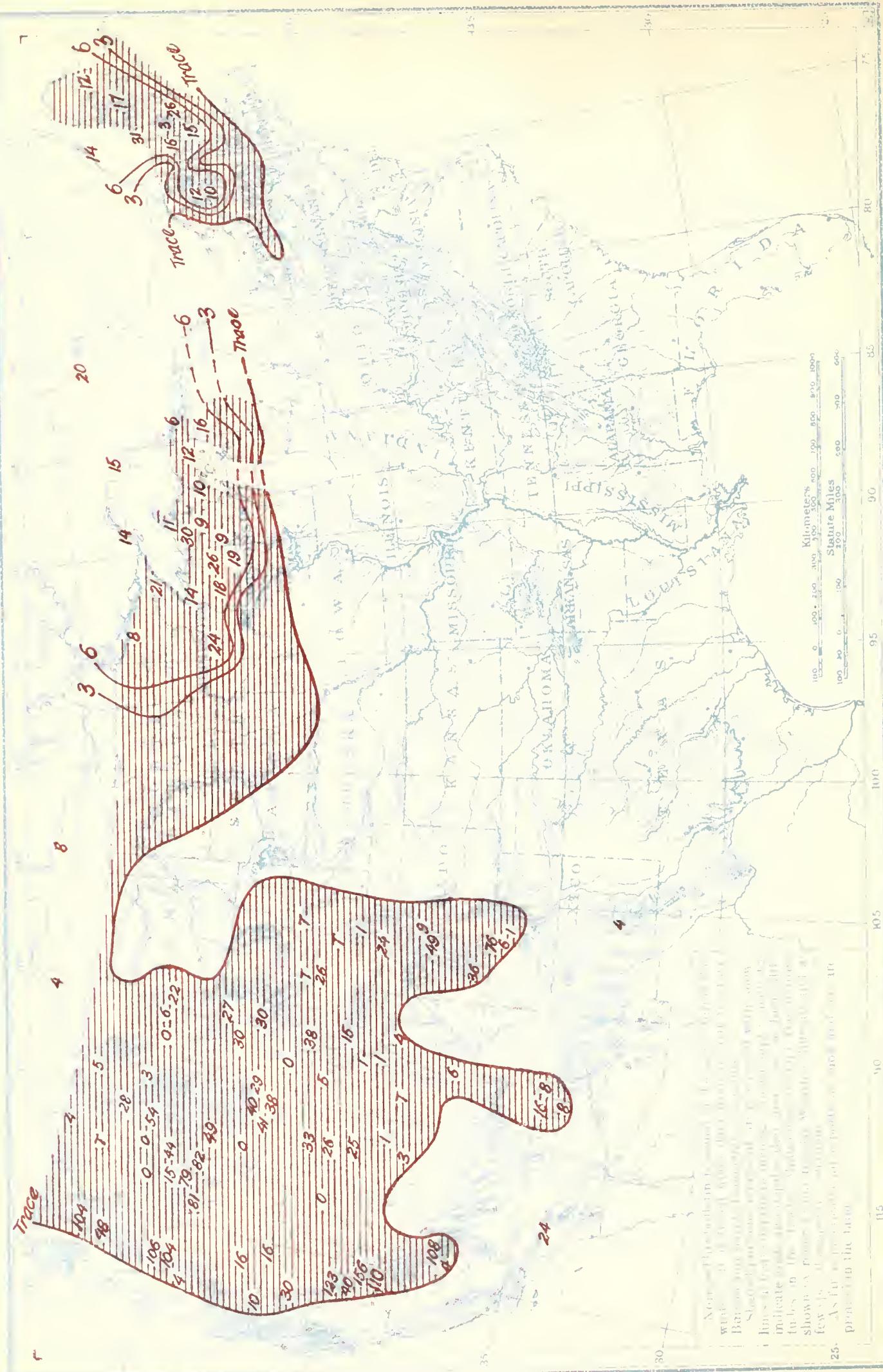
P. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 13, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>Arizona.</i>	<i>Inches</i>	<i>Inches</i>	<i>New Mexico.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff	3		Chama	6	
Fort Apache	T.		Cloudcroft	4	
Prescott	8		Tres Piedras	1	
Williams	16		<i>New York.</i>		
<i>California.</i>			Addison	T.	
Cascada	4		Albany	T.	0.0
Emigrant Gap	110		Alfred	1	
Huntington Lake	108		Beaver River	10	
Inskip	123		Buffalo	0	12.0
McCloud	30		Canton	T.	
Sierraville	40		Herkimer	2	
Squirrel Inn	24		Rome	2	
Summit	156		Roxbury	2	
<i>Idaho.</i>			Saranac Lake	12	
Hailey	38		Saratoga Springs	2	
Ketchum	40		<i>North Dakota.</i>		
McCal.	49		Bismarck	8	30.0
North Star Mine	29		Williston	T.	34.5
Porthill	4		<i>Oregon.</i>		
Soldier Creek	41		Billings	16	
Spencer	30		Cornucopia	82	
<i>Iowa.</i>			Detroit	4	
Albia	T.		Government Camp	104	
Des Moines	0	†	Hilgard	15	
Dubuque	0	†	Imperial Mine	79	
Estherville	T.		Lakeview	16	
<i>Maine.</i>			Siskiyou	10	
Cornish	20		Sled Springs	44	
Eastport	T.	0.0	Wallowa	10	
Gardiner	9	16.0	Welches	14	
Greenville	17	34.0	<i>Pennsylvania.</i>		
Houlton	12		Freeland	1	
Portland	3	0.0	<i>South Dakota.</i>		
Van Buren	T.		Huron	T.	22.0
<i>Massachusetts.</i>			Pierre	T.	?
Amherst	T.		Yankton	T.	10.0
Williamstown	T.		<i>Utah.</i>		
<i>Michigan.</i>			Kelton	5	
Alpena	T.	12.0	Modena	T.	
Cadillac	6		Provo	1	
Escanaba	3	26.0	Salt Lake City	1	
Harrisville	4		Watson	T.	
Houghton	11	9.5	<i>Vermont.</i>		
Iron Mountain	5		Brattleboro	T.	14.0
Iron River	9		Burlington	T.	14.0
Mackinaw	16		Northfield	11	
Mancelona	10		St. Johnsbury	16	
Maple Ridge	10		<i>Washington.</i>		
Marquette	4	6.0	Cascade Tunnel	104	
Menominee	12		Spokane	T.	
Newberry	12		Stampede	48	
Port Huron	0	*	<i>Wisconsin.</i>		
Sault Ste. Marie	6	12.0	Ashland	16	
Victoria	30		Eau Claire	T.	
<i>Minnesota.</i>			Green Bay	3	14.5
Duluth	14	21.0	Medford	19	
Minneapolis	2		Park Falls	26	
<i>Montana.</i>			Rhineland	9	
Havre	T.		Wausau	14	12.0
Kalispell	5		<i>Wyoming.</i>		
<i>Nebraska.</i>			Alta	30	
Omaha	0	†	Casper	T.	
<i>New Hampshire.</i>			Cheyenne	T.	
Berlin	3		Foxpark	15	
Concord	4	11.5	Newcastle	T.	
Durham	T.		Sheridan	T.	
Hanover	15		South Pass City	26	
Keene	6		Yellowstone Park	27	
Pittsburg	31				

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., March 13, 1922.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 12.

WASHINGTON, D. C., MARCH 21, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., MARCH 20, 1922.

Precipitation during the week just closed was distributed largely as has been the case for several weeks past. General and frequently heavy rains occurred over portions of the Southwest, and from the Mississippi Valley eastward, while from the upper Mississippi Valley westward, and over the Mountain, Plateau, and Pacific Coast States there was little precipitation, save locally over the far Northwest and in portions of Arizona and southern California.

At the beginning of the week rain was falling over a considerable area from the Southern Plains region northeastward to the lower Lakes and during the following 24 hours the rain area moved eastward to the Middle and South Atlantic coasts, with heavy falls in portions of the middle Mississippi and lower Ohio Valleys, and locally to the eastward.

After a few days of generally fair weather over most districts, rain or snow again set in over the southern Rocky Mountains and adjacent Plains region, and during Sunday and Monday the storm area moved to the middle Mississippi Valley and thence eastward, causing general rains over all central and southern districts and rain or snow from the lower Missouri and upper Mississippi Valleys to the Great Lakes and New England. In northern Michigan and portions of adjacent States the snowfall was heavy, and high winds were general over the Great Lakes. At the same time some heavy rains occurred over the North Pacific coast districts and light snows were reported from points in the northern Plateau and Rocky Mountain regions.

DEPTH OF SNOW.

No marked changes occurred during the week in the snow covered area, save that from Iowa eastward to the lower Lakes, bare a week ago, there is now a slight cover, due to the falls near the close.

Considerable snow occurred during the week in the upper Lake region, but much of it has melted.

In other districts there was a very general reduction in the depth, the losses being considerable in the Northeastern States, portions of Wisconsin, Minnesota, and North Dakota, and very generally in the western mountain districts, although there were some increases in the mountains of Washington and Oregon and locally in other States.

In the western mountain districts recent precipitation over the southern sections improved the outlook for a satisfactory supply of water during the coming summer, save over New Mexico, while in other mountain States the outlook continues good, being especially favorable in California and the central Plateau region.

ICE IN RIVERS AND HARBORS.

With the exception of a few points in the Lake Superior district and locally in northern New England, no new ice formed during the week on the main rivers and lakes, and the thickness previously reported was materially reduced.

Of the main rivers of the country, only the Missouri from Bismarck northward, and the upper portions of the Hudson and the rivers of northern New England remain closed.

The harbors of Lake Superior remain closed as well as the Michigan Straits. Elsewhere the harbors of the Great Lakes are open, except at the eastern end of Lake Erie, and the ice fields are breaking up and drifting with the winds.

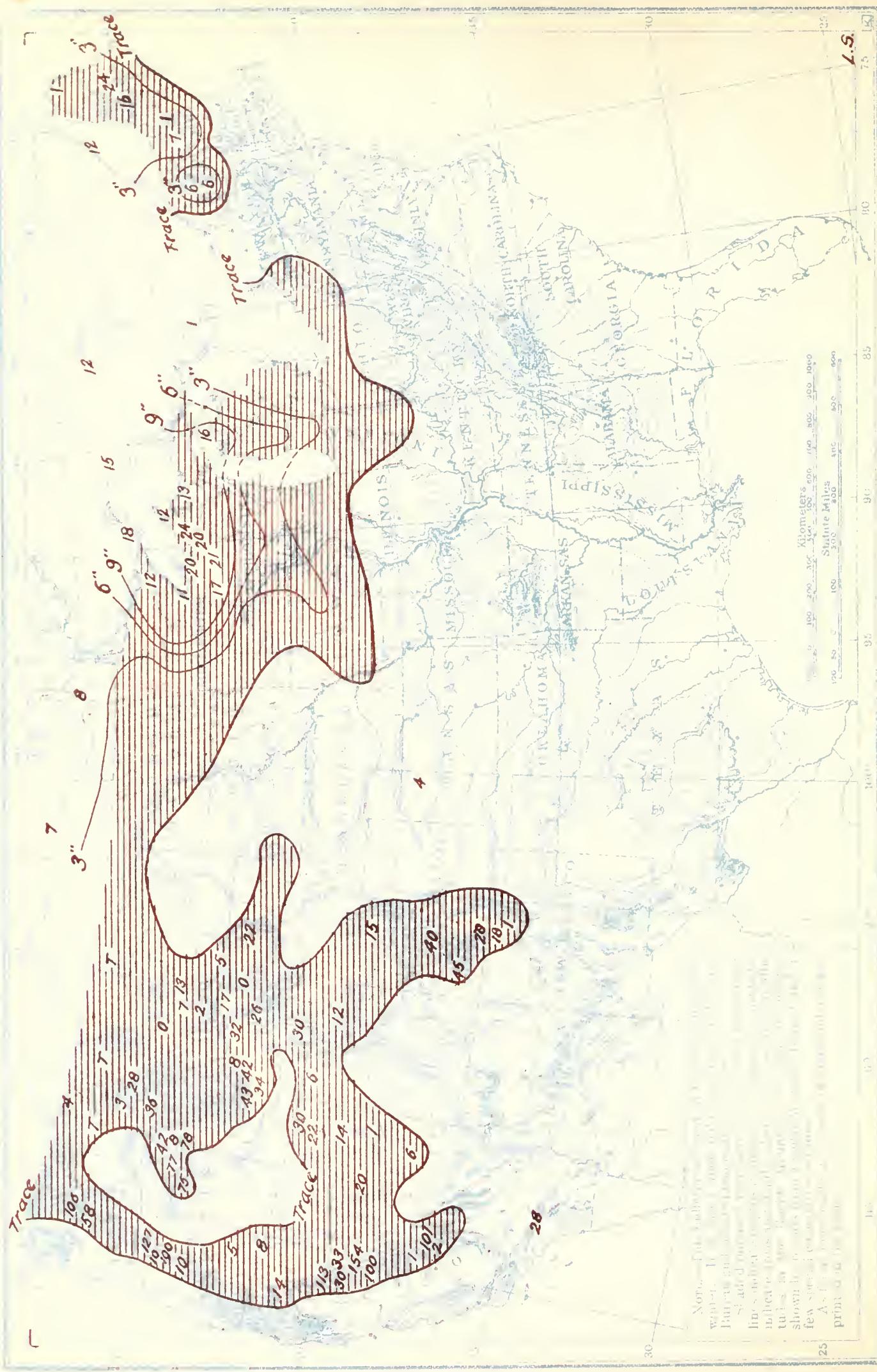
P. C. DAY,
Climatologist and Chief of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 20, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>California.</i>	<i>Inches</i>	<i>Inches</i>	<i>Nevada—Contd.</i>	<i>Inches</i>	<i>Inches</i>
Emigrant Gap	100	...	North Fork	22	...
Huntington Lake	101	...	Sharp	6	...
Inskip	113	...	<i>New Hampshire.</i>		
McCloud	14	...	Berlin	1	...
Portola	33	...	Concord	0	5.0
Sierraville	30	...	Hanover	6	...
Squirl Inn	28	...	<i>New Mexico.</i>		
Summit	154	...	Chama	18	...
<i>Colorado.</i>			Tres Piedras	1	...
Cumbres	80	...	<i>New York.</i>		
Rico	45	...	Alfred	T.	...
Steamboat Springs	15	...	Beaver River	6	...
<i>Idaho.</i>			Buffalo	T.	12.0
Hailey	34	...	Canton	T.	...
Ketchum	43	...	Saranac Lake	6	...
Mackay	8	...	<i>North Dakota.</i>		
North Star Mine	42	...	Bismarck	T.	26.0
Porthill	4	...	Devils Lake	T.	...
Spencer	32	...	Ellendale	1	...
<i>Indiana.</i>			Williston	T.	34.0
Fort Wayne	2	...	<i>Ohio.</i>		
Indianapolis	T.	...	Cincinnati	T.	0.0
Royal Center	1	...	Cleveland	T.	0.0
<i>Iowa.</i>			Dayton	T.	0.0
Charles City	1	...	Sandusky	T.	0.0
Davenport	T.	0.0	Tiffin	T.	...
Iowa Falls	3	...	Toledo	T.	0.0
Pocahontas	1	...	<i>Oregon.</i>		
<i>Kansas.</i>			Billings	5	...
Dresden	4	...	Cornucopia	78	...
<i>Maine.</i>			Detroit	10	...
Cornish	14	...	Government Camp	100	...
Gardiner	T.	†	Imperial Mine	77	...
Greenville	10	37.0	Lakeview	8	...
Millinocket	24	...	Sled Springs	42	...
Portland	1	0.0	Wallowa	8	...
Van Buren	1	...	Welches	10	...
<i>Michigan.</i>			<i>Pennsylvania.</i>		
Battle Creek	2	...	Pittsburgh	T.	0.0
Cadillac	4	...	<i>South Dakota.</i>		
Detroit	1	0.0	Yankton	0	†
Escanaba	10	21.0	<i>Utah.</i>		
Grand Haven	5	...	Kelton	6	...
Grand Rapids	6	...	<i>Vermont.</i>		
Houghton	12	6.0	Brattleboro	0	*
Ironwood	20	...	Burlington	T.	12.0
Ludington	5	...	Northfield	4	...
Mancelona	9	...	St. Johnsbury	7	...
Marquette	13	7.0	<i>Washington.</i>		
Menominee	10	...	Cascade Tunnel	106	...
Saginaw	1	0.0	Spokane	T.	...
Sault Ste. Marie	7	16.0	Stampede	58	...
Victoria	24	...	<i>Wisconsin.</i>		
<i>Minnesota.</i>			Ashland	20	...
Duluth	11	19.0	Eau Claire	T.	...
Minneapolis	T.	...	Fon du Lac	2	...
Moorhead	1	*	Green Bay	2	*
<i>Montana.</i>			La Crosse	2	0.0
Bozeman	2	...	Medford	5	...
Findon	13	...	Milwaukee	T.	0.0
Haugan	28	...	Park Falls	21	...
Havre	T.	...	Rhinelander	7	...
Kalispell	T.	...	Wausau	8	11.5
Red Lodge	5	...	<i>Wyoming.</i>		
<i>Nebraska.</i>			Alta	26	...
Omaha	T.	0.0	Cheyenne	T.	...
<i>Nevada.</i>			Evanston	12	...
Arthur	14	...	Newcastle	T.	...
Austin	20	...	Sheridan	T.	...
McGill	1	...	Yellowstone Park	17	...

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p.m., March 20, 1922



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 13.

WASHINGTON, D. C., MARCH 28, 1922.

WINTER 1921-22.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK ENDED 8 P. M., MARCH 27, 1922.

The week just closed was without marked weather changes, and the advance of spring was not materially checked.

The storm passing over the Northeastern States at the beginning of the week, gave local heavy rains along the New England Coast, and light snows from the Ohio Valley and Lake region northeastward. At the same time fair weather prevailed over nearly all central and western districts, continuing to the middle of the week, when rain or snow set in over the far West, and during the latter part overspread considerable portions of the country to the eastward. By Sunday morning the rain area was central over the lower Mississippi Valley and some heavy rains had fallen during the preceding 24 hours over eastern Texas, in Arkansas and over portions of adjoining States. At Houston, Tex., the rainfall for this storm amounted to nearly 8 inches, and heavy falls in the drainage area of the lower Mississippi Valley added further to the high water conditions already existing in that locality.

At the close of the week this storm had advanced to Ohio, with diminishing energy, and another moving into the southern Plains States had given local snows in the central Rocky Mountains, and light rains in adjacent districts.

DEPTH OF SNOW.

Over all eastern districts the snow melted rapidly during the week just closed, the decreases in the depth of cover over portions of the upper Lake region ranging up to a foot in some cases. Over northern New England the decrease was likewise substantial but somewhat less.

In North Dakota there was rapid melting during the early part of the week, but toward the end more snow fell and the depths over that and portions of adjoining States are now several inches greater than were reported a week ago.

In the western Mountain districts there was nearly everywhere a sharp decrease in the depth of the snow cover, but this was mostly the result of settling and, except in the more southern districts, there was probably but little runoff.

The snow-covered area was considerably reduced in the region of the Great Lakes, and the light cover over central New England has now disappeared. In other portions of the country there has been no marked reduction of the area snow covered a week ago.

Late reports of snow conditions in the western Mountain districts bear out the earlier indications of a good supply of water for irrigation and power purposes during the coming dry season, this being particularly true for California where the outlook is the most favorable for a number of years.

ICE IN RIVERS AND HARBORS.

In the absence of warm rains there was no rapid melting of the ice over the streams and lakes of the more northern districts where it still remains.

The harbors of Lake Superior are still closed, but the covering is gradually decreasing, and less field ice is reported. The straits around northern Michigan are still solid, but the southern portions of both Lakes Michigan and Huron are practically free of ice and Lakes Erie and Ontario are likewise free except over the extreme eastern portions.

P. C. DAY,
Climatologist and Chief of Division.

NOTE.—The issue of this date is the last for the winter of 1921-22. A brief report on ice conditions over the Great Lakes will be issued for several weeks from the Weather Bureau office in Detroit, Mich. Copies of this may be secured by addressing that office.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 27, 1922.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>Arizona.</i>	<i>Inches</i>	<i>Inches</i>	<i>Montana—Contd.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff	T.	.....	Red Lodge	T.	.....
<i>California.</i>			White Sulphur Spr'gs	3	.....
Emigrant Gap	92	.....	Nevada.		
McCloud	7	.....	Arthur	11	.....
Portola	25	.....	Austin	12	.....
Sierraville	25	.....	Gold Creek	24	.....
Squirrel Inn	8	.....	North Fork	20	.....
Summit	146	.....	Sharp	1	.....
Yosemite	3	.....	<i>New Hampshire.</i>		
			Berlin	T.	.....
			Hanover	1	.....
			West Stewartstown	3	.....
			<i>New Mexico.</i>		
Cumbres	57	.....	Chama	T.	.....
Dillon	12	.....	<i>New York.</i>		
Leadville	1	.....	Beaver River	6	.....
Rico	30	.....	Buffalo	0	†
			Saranac Lake	6	.....
			<i>North Dakota.</i>		
Idaho.			Bismarck	4	‡
Hailey	25	.....	Devils Lake	4	.....
Ketchum	30	.....	Williston	5	‡
Mackay	7	.....	<i>Oregon.</i>		
Montpelier	18	.....	Ben Harrison Mine	75	.....
North Star Mine	32	.....	Cornucopia	79	.....
Pierce City	36	.....	Detroit	8	.....
Porthill	2	.....	Government Camp	86	.....
Soldier Creek	30	.....	Imperial Mine	74	.....
Spencer	27	.....	Lakeview	5	.....
Wallace	2	.....	Larch Mountain	116	.....
			Sled Springs	36	.....
			Wallowa	3	.....
			Welches	6	.....
			<i>South Dakota.</i>		
<i>Maine.</i>			Pierre	2	0.0
Greenville	9	33.0	Rapid City	1	.....
<i>Michigan.</i>			Kelton	2	.....
Alpena	T.	0.0	<i>Vermon.</i>		
Escanaba	1	23.0	Brattleboro	0	*
Harrisville	2	.....	Burlington	T.	9.5
Houghton	4	†	Northfield	1	.....
Humboldt	24	.....	St. Johnsbury	T.	.....
Iron Mountain	2	.....	<i>Washington.</i>		
Ironwood	12	.....	Cascade Tunnel	90	.....
Mackinaw	12	.....	Laurier	T.	.....
Maple Ridge	8	.....	Spokane	T.	.....
Marquette	T.	3.0	Stampede	50	.....
Menominee	2	.....	<i>Wisconsin.</i>		
Newberry	9	.....	Ashland	6	.....
Sault Ste. Marie	1	15.0	Wausau	T.	8.0
Victoria	18	.....	<i>Wyoming.</i>		
			Alta	24	.....
			Casper	5	.....
			Cody	4	.....
			Dome Lake	27	.....
			Encampment	T.	.....
			Evanston	10	.....
			Foxpark	30	.....
			Haugan	25	.....
			Havre	1	.....
			Land	3	.....
			Helena	T.	.....
			Newcastle	2	.....
			Kalispell	T.	.....
			Sheridan	1	.....
			Lewisburg	1	.....
			South Pass City	18	.....
			Miles City	T.	10

*Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., March 27, 1922.

